ALPHABETICAL INDEX

FOR

VOLUME VII

MINING CONGRESS JOURNAL

EDITORIALS

METALS, ORES, ETC.

COAL

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NATIONAL LEGISLATION

The
MINING CONGRESS JOURNAL

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GOVERNMENT ECONOMY APPROVED

"The government does not pretend to live within its own income, only within ours."

THIS QUOTATION from the *Wall Street Journal* will excite public interest and those who really desire to keep within the taxpayer's income will applaud to the limit the statement of House Leader Mondell to the effect that $1,400,000,000 shall be cut from the submitted estimates of $4,653,800,000 covering departmental expenditures for the coming year. There are times when economy is a serious mistake. There are other times when all economy should be practiced in order to meet already burdensome obligations. In ordinary times it might be the part of unquestioned wisdom for the householder to paint his house, first for psychological reasons and, second, for preservation. But where the householder is facing the foreclosure of a mortgage it would be foolish indeed to borrow money to improve the house. Better first care for the obligations which cannot be escaped.

Let us first reduce the mortgage and afterwards improve the property. During the period of deflation, during the period when industries and trade will necessarily be slackened by the uncertainty as to whether bottom price levels have been reached or not, it is well to guard as carefully as possible against every unnecessary expenditure.

The American public will support Leader Mondell and those public officials who help in carrying out the program which he has announced. In this connection, the country will also approve the recent statement by Vice President-elect Coolidge to this effect:

"I am not in favor of the suggestion that has been made for providing a large establishment for the vice presidential residence. It seems to me that such things would be inappropriate at a time when we are all giving our thought to enforcing economies in both government expenses and private living."

Governor Coolidge is right. This is no time to seek new avenues of expense. Some day a suitable residence for the Vice President should be provided. Now let us prune down every expenditure, lop off every useless service, demand efficiency from and give better pay to all government employees who are necessary to the public requirement, and scatter out of Washington all those who are not so required. Those government employees who take the full four weeks' vacation and four weeks' sick leave on pay and manage to be sick just the four weeks permitted should be given opportunity to seek a more congenial clime.

A DIVISION OF MINES AND GEOLOGY

IN CONNECTION with the development of those natural resources which under the leasing bill remain under federal ownership, and in rendering proper assistance to the production, transportation and exchange of those mineral products now in private ownership but in the production of which the public is so keenly interested, it is vastly important that the agencies having to do with these matters should function in the most effective way. There should be no duplication of effort; each division of work should so nicely dovetail into other branches that there would be no waste; and every dollar of expenditure should lead to complete and efficient service. It is not only important that bureaus having to do with these matters shall perform their individual functions efficiently but it is sometimes vastly important that these services shall dovetail into governmental policies intelligently and effectively.

The production, transportation and exchange of the fuel supply of the country is necessary to industrial prosperity and to domestic comfort. Before the war the United States enjoyed the cheapest and the best fuel and power supply of any country in the world. This was developed without governmental interference, through the operation of the law of supply and demand. War conditions created an unprecedented demand and before these functioning agencies could adjust themselves to new conditions, a foolish governmental interference so disturbed the machinery that the country has suffered temporary want of fuel and a cost enhanced many times above what a proper administration of coal production would have entailed. A blacksmith's hammer was used to adjust the intricate operations of a delicately created timepiece. This is not a criticism of the function of the blacksmith's hammer, but it does demonstrate that to use unsuited agencies to direct the operations of agencies developed from the experience of thousands of trained minds applied to the subject brings ruin to the machinery and consternation to those who rely upon its efficient operation. The business of mining can be greatly benefitted by co-operative investigation of problems, the solution of which is of general benefit, but which cannot be investigated by each individual enterprise for the benefit of all. There is, therefore, a field in which governmental assistance is of unmeasured advantage. To define that field, to correlate these efforts, to bring each investigating agency into proper relation with others of its kind, needs even better facilities than are now available in our government organization.

To meet this idea the Denver convention of the AMERICAN MINING CONGRESS went on record in favor of a Division of Mines and Geology in the Department of the Interior, to be in charge of an Assistant Secretary of the Interior, to be appointed for that specific purpose by the President. We believe that such a division would effect many economies of administration and bring about even greater public benefit than has already been given by those agencies which in recent years have served the mining industry. To know what should be done and to know where to leave the industry to manage itself without interference will require the brains and activity of a broad, capable man whose whole life shall be devoted to an effort to benefit rather than interfere with the mining industry.

THE POINDEXTER ANTI-STRIKE BILL

AS A PART of that governmental power which justifies the control of transportation rates and which undertakes to protect the public's right to proper transportation facilities, the Poindexter proposal must be accepted as within the government prerogative. Under present-day conditions, with the world's food supply limited at any one time to a few months at most and with certain necessities in our larger centers of population limited to the day's importation, the power to limit transportation facilities and thus cut off the supply of life's necessities at any populace center should not be permitted through joint action which amounts to a conspiracy under the strike provisions of the Sherman anti-trust law. To quote from a previous editorial reference:

> "The right to strike is a qualified right which ceases and becomes a conspiracy against the government when it interferes with the production and distribution of the necessaries of life."

The Poindexter bill, in effect, prohibits such a conspiracy. It provides that whoever with intent to destruct, delay, hinder or prevent the movement of commodities in commerce shall by word of mouth or printed circular advise or induce or attempt to induce any employee to quit his employment, or who shall by like means undertake to prevent anyone from engaging in employment; or, whoever shall injure or destroy any agency of commerce, or who shall attempt to induce others to do so, shall be deemed guilty of a felony punishable by heavy fines and imprisonment; and further, that it shall be unlawful for two or more persons who are the officers or agents of any common carrier to enter into any combination or agreement to substantially hinder, restrain or prevent the operation of trains for the movement of commodities in interstate commerce.

The right of every individual to quit work is inherent but the power of a majority of the members of a union to require the individual worker, against his will, to submit to their dictation is subversive of the fundamental principles of liberty.

This majority of the membership of a union is but an infinitesimally small minority of the citizenship of the nation. Any man who owes a greater obligation to his union than to his country is an undesirable citizen and should be deported. Ours is a government of the people in which the majority must rule; not a majority of a minority, but a majority of the citizens of the nation. That majority selects by ballot its officials whose duty it becomes to protect all citizens in their inherent and constitutional right to "life, liberty and the pursuit of happiness." These rights cannot be preserved to the citizens of our great industrial centers except by preventing strikes which deprive these centers of necessary supplies of food. The Poindexter bill undertakes to preserve those rights. The recent election demonstrated quite effectively that this nation does not approve the insistent demand of organized labor that it shall be allowed to direct the destinies of the nation, nor to remain in position to strangle the nation's life whenever in its judgment such course will enhance the cause of organized labor. The conditions surrounding the enactment of the Adamson law have not been forgotten. The enactment of the Poindexter bill will be an effectual crystallization of public sentiment as expressed by the last great public referendum.

A HELP TO GRADUAL DEFLATION

THE PROPOSAL for immediate tariff legislation which will protect our home markets against too radical price deflation finds two justifications, first, that unless some encouragement is given our domestic industries, production is likely to fall to a point where price levels of the future will be higher rather than lower than at the present time; second, the necessity of such legislation for revenue purposes appeals with distinctive force as a relief from the enormous tax burdens which must be borne by the public.

Incidentally, until such time as normal levels are reached, there would seem to be strong reasons why importers should pay to the government the full value of the advantages offered by our markets. During the war it was vigorously urged that no embargo should be made against the importation of Brazilian manganese, the appealing part of this argument being that Brazil furnished a market for our fabricated products with high valuations and that we must accept in payment her manganese ores which were of higher grade and more cheaply mined than our own. The logic of this argument, however, does not carry with it the belief that unmanufactured foreign products should be sold in our markets at prices in excess of the cost of production and transportation with a reasonable profit. The government is entitled to receive at least a good share of any excess profit which our markets make available to foreign production. Under the present governmental requirements for large revenues, no reasonable source of indirect taxation should be overlooked.

The winding road down the hill is safe while a fall over the precipice is dangerous and perhaps fatal.

Price deflation must be gradual and steady if we are to avoid industrial disaster.

THE INTERIOR DEPARTMENT

THE INTERIOR DEPARTMENT has been the Jack-of-all-work to which every government service has been given which was not wanted elsewhere. Its natural function would be the control and development of the interior resources of the nation with a view to their highest conservation and use. It is the home department designed to have jurisdiction over the domestic affairs of the federal government. Originally its chief function was the management and disposal of the public lands. The recent enactment of the public lands leasing bill by which the most valuable resources of the government—its fuel and power resources, shall continuously remain in the control of the government puts upon that department a greater responsibility than entailed by all of its previous activities. We cannot believe that anyone with a vision of the true nature of those responsibilities could for a moment believe that this department should be abolished and all of these responsibilities turned over to some inconsequential agency in order to take charge of the much more restricted obligation presented in the construction of its public works. The resolution of the Denver convention upon this subject is as follows:

WHEREAS, More than one-half of the acreage of the United States west of a north and south line drawn through the eastern border of Colorado is now owned by the federal government; and

WHEREAS, The enactment of the Public Lands Leasing Bill creates a continued responsibility upon the federal government in handling the public lands of the West; and

WHEREAS, This vast expanse of territory contains more than 3,000 million tons of coal, untold oil reserves, oil shale deposits of unmeasured value, water power, measured in production force, many times greater in value than its oil, oil shale and coal reserves combined, and immense deposits of phosphates and other minerals; and

WHEREAS, The administration of these vast resources will require an increasing service from that department which is charged with the work of supervising the development of the Rocky Mountain and Pacific Coast western states, namely, the Department of the Interior; and

WHEREAS, A proposal has been made looking to the discontinuance of the Interior Department and the creation in its stead of a department of public works;

Now, therefore, be it resolved, That THE AMERICAN MINING CONGRESS in its twenty-third annual session assembled in Denver, Colorado, November 15-19, inclusive, enters its protest against the abolition of the Interior Department and urges that the Interior Department shall be continued for the above weighty duties and as that department through which the mining industry of the United States shall function in federal affairs.

The MINING CONGRESS JOURNAL commends this proposal to Congress as embodying a governmental necessity and as representing the thought of the great west. The development of our natural resources is an essential part of the continued progress of this great nation. The proper conservation of our resources, which means the highest use and the least possible economic waste, is not a task to be lightly considered. After the protection of our national Constitution from the vagaries of Bolshevik thought, the next most important thought is the development of the wonderful national resources upon which the industrial prosperity and consequently the happiness of this people must be founded.

IMMIGRATION

THE CONSERVATISM of the United States Senate has been frequently attacked as not being properly responsive to the public will and there are many people who believe that it should be possible to amend even the Constitution to meet the passing judgment of the people. It is argued that in a government "of the people, by the people and for the people" that an expression of the public will should immediately crystallize itself into legislative enactment. The framers of our form of government, to whose superjudgment every country of the world now pays tribute, provided that the Constitution should not be amended except by processes which required a considerable duration of time, in order that it might be a register of settled public opinion rather than a hysterical conclusion based upon a temporary issue. Those same founders of the republic provided that the United States Senate should be far enough away from the popular clamor as not to be unduly influenced by passing agitation. The writer cannot believe that our form of government was strengthened by the popular election of our Senate. The conservatism of the Senate will be tested by its action upon the proposed immigration bill, providing an absolute prohibition of immigration for a period of two years.

Many good men are favoring this legislation without a proper consideration of the facts. Under the guise of keeping undesirable citizens away, we are proposing to prohibit both desirable and undesirable immigration. This is an expanding country. Very fortunately it provides facilities for educational advancement which makes its possessor unwilling to perform menial labor. Our civilization is a series of ladders enabling the lowest in rank, if possessed of ambition, thrift and industry, to climb to the top. The children of these progressive immigrants with the advantages of high school education are not as a rule found performing common labor. Unless these callings are supplied from elsewhere than our high schools, we shall surely be without that class of labor which builds our railroads and operates our mines. This character of work is fundamentally essential and to close our doors to proper immigration is to leave us without a proper supply of common labor.

The agitation for legislation prohibiting immigration comes principally from organized labor which, through this course, will strengthen its control. It is frequently desirable to get back into the country and away from industrial centers to learn public sentiment freed from the influences of either organized labor or organized capital. The following quotation from the *Republican Watchman*, a Sullivan county (N. Y.) publication, will be of interest as illustrating what unbiased people think of the situation. Under the title, "Stop Immigration," the editor voices the following sentiment:

Shall the United States stop immigration? Yes and no. Yes, as to undesirables and no as to desirables.

If the bill approved by the house committee is passed by Congress the influx will be virtually stopped for the coming two years. Of course, an exception is to be made in favor of certain classes, but they will constitute a small number. Those exceptions mean the parents, grandparents, sons and daughters of the citizens of the United States.

Hundreds of thousands of foreigners are only waiting for a chance to come to this country. They have been told by steamship agents and written to by friends of the opportunity for labor in the United States. They have been told that carpenters receive $16 a day and farm hands were paid $25 a week and common labor received 50 and 75 cents an hour, and the story told them was true—true then, but not true now and neither will it be true next year. To pass a law protecting labor for two years is reasonable—that is, it is reasonable, if labor desires to work. But if half of labor is on a strike half the time as it has been during the past two years, then labor needs no protection by Congress. Under such conditions it is the employers who need protection and the only way to protect them is by foreign labor. The mines must be worked; the farms must be farmed; railroads and anto roads must be built, and common labor and skilled labor must be had. If employers can't get labor here the old country must furnish it.

The sentiment expressed above is worthy of careful consideration of the United States Senate. It is hoped that proper safeguards shall be placed against the introduction of undesirable aliens, but until the supply of common labor is sufficient to meet industrial requirements that desirable immigration shall be encouraged. It is hoped that the conservative judgment of the Senate will give due consideration to the industrial needs of an expanding and growing country, where labor is as necessary as brains and capital.

THE PSYCHOLOGY OF THE NICKEL

NOT MANY YEARS AGO the most persistent subject of municipal agitation grew out of the protest of the public against the public utility corporations. A nickel service for telephones and street car rides was in many instances believed by the public to be excessive because of the fact that the corporations controlling this service were able to add to the wealth of the promoters and create funds through which these companies might contribute to political corruption in an effort to control the city councils which were authorized to grant franchises and to determine the question of rates. Gradually these agitations led to a policy by public utilities corporations to withdraw from politics, to take the public into their confidence, to satisfy themselves with a fair profit upon stock, watered and otherwise, the public being reluctantly willing to let bygones be by-gones, to start upon a new basis, to permit the companies to use their excess earnings above operating costs in extensions and betterments, and in practice leading to better service, better satisfaction and cleaner politics. Then the increased cost of operations, growing out of higher price levels, created financial difficulties for many of these companies and the right asked for to increase rates.

The best earnings of a street car company are upon its short hauls. The haul of a passenger several miles for a nickel probably means a loss to the operating company, while the transportation of that passenger for a few blocks may mean an extraordinary profit. The inconvenience of a six, seven or eight cent fare as compared with the nickel means that the street car company in many instances will not be patronized for the shorter distances. There is a psychology in a nickel price, which leads to its willing payment, while a price of six cents, which means two coins instead of one, may lead to a great diminution of that kind of travel upon which there is the greatest profit.

The history of the Capital Traction Company in Washington as developed by a statement from its president before the Utilities Commission is a demonstration of the position of the MINING CONGRESS JOURNAL, that an increased price for public utility service does not mean increased profit to the operator, does not mean increased service to the public, but does mean an increased cost of operation which benefits neither the corporate owner nor the public and its benefit to those who absorb the additional expense is a matter to be seriously questioned.

To make the situation clear, it must be stated that Washington has two systems of street car service. One system at a five-cent fare was making an adequate profit and so stated before the Utilities Commission. The other company, partially because of labor strikes which had crippled its equipment and disorganized its service and partly for other reasons, found itself operating at a loss with a five-cent fare. To increase its charge for service without increasing that of the profitable company meant an increased patronage of the five-cent line and a loss of business to the one making the increased charge. It, therefore, in the judgment of the Utilities Commission, became necessary to advance the fare of both companies to eight cents. At this time the weaker company is making application for a still further increase of its charges, while the better-managed company, through its president, now states that it would be impossible for his company to go back to a five-cent fare and pay operating expenses.

Since the increased fare was authorized price levels and the cost of operation have not increased, while it is probable that efficiency of service has increased. The increased fare has led to an increase in operating expenses from which the public receives no advantage and while the wage-earning public must pay higher fares which will in turn justify a higher wage. High price levels for public service are an obstacle in returning to normal conditions. The psychology of the nickel should be given proper consideration in fixing the price levels of the future.

GOVERNMENTAL INTERFERENCE WITH COAL

GOVERNMENT INTERFERENCE in any business not affecting the safety and morals of its people is unwarranted, except in times of great emergency. Government control of prices is always unwise unless perhaps it may be in those fields where there is a monopolistic control of nature's supply of raw material. Even in these latter cases a too high price upon the product, the control of which makes impossible competitive production, usually leads to the creation of substitutes which sufficiently satisfy the public in that behalf.

Exception may be made in those public utility services which are necessary monopolies and which service is necessary to the public comfort and convenience. In the present investigation of the coal business ridiculous indeed are the amateur opinions advanced by men made prominent through political acumen and who assume to have learned more of the coal business through an investigation, largely directed by muck-raking advisors, during a period of two or three months, than men of equal or greater ability who have concentrated their life's effort in practical coal-producing operations. It would be well for the public interest if these men could be impressed with the teaching of all history in matters of this sort, that the law of supply and demand cannot be disregarded without disturbing in a dangerous way the machinery of competitive production through which prices have ever been brought to a normal basis.

There are now in operation in this country approximately seven thousand coal mines. There are approximately fifteen thousand operations available for immediate coal production, if the wagon mines are to be included. During the war, production and transportation machinery was disorganized, partly by the stress of war conditions but more largely by governmental interference.

The presently developed facilities of coal production in this country make possible an annual output of nearly 800 million tons of coal, while the possible consumption, including all coal which it is possible to export with our present port facilities, is less than 600 million tons. With all of these facilities for the unerring operation of the law of supply and demand, the statesmen who are considering this problem seem not to have given any consideration to the theory that price itself will regulate production. Where the price is too high over-production will quickly follow and where the price is too low production will quickly and certainly be reduced.

Reduced production will lead to a shortage of supply and an increased market price, which in turn will again stimulate over-production. As an illustration of this principle, the zinc situation in the early days of the war may be cited. Prior to the war over-production of zinc depressed the market to a point where only the high grade mines could operate at a profit and a consequent falling off of production found the country at the opening of the war with small zinc stocks and production abnormally low. The excessive war demand immediately forced the market from approximately 6 cents per pound to a high point of 27 cents per pound. Had the war price regulating boards been then in operation, it is quite certain a price would have been fixed at perhaps 18 or 20 cents per pound, being theoretically high enough to stimulate the required increased production and this price would undoubtedly have remained for a considerable period and probably throughout the war. Fortunately for the government there was no price-fixing board then in existence and this enormous over-price so stimulated production that within the first year prices had again dropped to a 9-cent level.

If the senatorial investigating committee could grasp the more fundamental principles of economics it would devote itself more to the removal of governmental business interference by which the law of supply and demand could operate without restriction rather than add to those governmental interferences which are largely responsible for the present unsatisfactory conditions in the coal trade. Sufficient indeed is the congressional responsibility to put "More business in government," and this task properly performed will leave little time for putting "Government in business."

IMPORTANCE OF GOLD PRODUCTION

FUNDAMENTALLY all business prosperity depends upon that greatest of early inventions—money. The present day business exchange of the world could no more be carried on without a medium of exchange than our industrial production could be met with the primitive tools of ancient days. The inventive genius of the ages has to its credit no more important accomplishment than the creation of means by which values may be measured by a common denominator, easily handled and universally representing the same value.

Today there is but one standard of value throughout the civilized world. Upon that foundation of gold reserves, partly because of the war, partly through monopolistic control first and for many years by industrial magnates and later by labor magnates, effort has been made to raise the price of commodities to a point where greater profits might accrue for the benefit of this monopolistic control. During recent years the world war has accentuated the price increase process beyond all anticipation

In the end the value of all products must and will be measured by the device known as money. Money, so-called, includes both the real money and the circulating medium which is accepted as money. In the end, however, the credit part of this circulating medium must not be so great as to make impossible its ultimate redemption in that real money which is the only kind accepted universally through civilized countries, viz., gold.

Money, to be accepted at its face value, must carry a positive guarantee of redemption in gold when called for. The greatest cloud upon the horizon of an enormous industrial prosperity is the lack of sound money throughout the world with which to meet the enormous debt burdens entailed by the war and at the same time meet the credit requirements essential to industrial activity.

Perhaps copper offers the best illustration of this condition. During the war some European countries stripped the roofs from their buildings and melted down fabricated products containing copper in order to meet the requirements for manufacturing war munitions. The manufacturing cost of these materials was several times greater than the value of the copper contained therein. Parts of Europe stripped of her copper supplies, with her industrial machinery devastated, need and must have an enormous supply of copper to rebuild her prostrate industries. This country holds enormous copper reserves awaiting markets and perhaps held as security for loans upon which the copper industry is paying interest, awaiting the time when European finance can be so rebuilt that the purchase of the American supply of copper is possible.

What is the fundamental difficulty which prevents Europe from regaining her formal credit position? The immediate answer will be that because Europe has wasted and destroyed so much of her resources by war activities, she is now unable to command the confidence, or, in other words, the credit which will enable her to buy the necessary supplies for the recoupment of her industrial enterprises.

The United States was also in this war. Her losses and waste, proportionately, were on a par with other nations and during the time of her participation were proportionately much greater than other nations because of her high costs of production, her Hog Islands, her cost-plus-10-per-cent plan of operation, not to speak of the unrighteous demand of labor for unheard of wages for slack production.

Those supplies which we manufactured and sold to Europe on long-time credits must be included as a part of the shortage with which the country must now reckon. The large volume of credit extended to Europe played no small part in swelling our domestic credit and currency structure, an inflation which automatically made possible the rapid and extensive rise in all commodity prices. The difference between this and European countries is largely measured by the difference in gold reserves. Prior to the war, the United States held approximately one-sixth of the world's gold stock, and, during that period, the credit of most civilized nations was on a par with that of the United States. At this time we hold approximately one-third of the world's gold stock and our money is kept at par while the money of practically all other nations is at a discount. Is it not fair, upon these facts, to assume that the greatest need of the world today is an increase of its gold supply and that the world's need reacts upon our own industrial prosperity in such a way as to at least partially rob us of the advantage which grows from having temporarily more than our share of the world's gold? The gold question is not new. When the credit of this nation was almost as low in its standing as the present credit of Germany; when it was commonly stated that a hay-rack was required to haul to market the money necessary to buy supplies to be brought home in a basket, the discovery and production of gold in California and Colorado, restored the financial stability of the nation.

The financial and industrial depression which followed the Civil War was turned into prosperity, our business was put upon its feet and the greatest industrial expansion and financial growth ever known to any country in the history of the world was predicated and built upon the gold and silver production of California, Nevada and Colorado. Now we are reversing this process. We now find that the country's production of new gold for 1919 was but 60 millions, 19 million dollars less than was withdrawn for other than monetary purposes. We are permitting our gold production to be annihilated by the economic stress of the times. We are facing a withdrawal of part of our present gold by those European nations which must have a basis of credit if they are to revive their prosperity, pay their debts or ever be in position to do business with us. European financial stability is necessary if we are to find in foreign markets an outlet for that excess of production which this nation must have if its industrial machinery is to be kept in operation.

The United States needs to retain undiminished its normal supply of gold if its present currency medium is to remain upon a sound money basis. To accomplish this, the production of new gold will greatly assist in supplying the natural and necessary drains to those foreign countries whose need for gold is very much greater than our own. That need may be measured by the present gold value of the currency of European countries. With the continuation of a free gold market, gold will naturally seek that place where the highest value is placed upon it. A free gold market is essential to the maintenance of the gold standard and it well behooves our legislators to so stimulate gold production that the value of our own currency shall always remain at par.

GENERAL LAND OFFICE REQUIRES VERSATILITY OF ITS MEN

COMMISSIONER CLAY TALLMAN of the General Land Office says in his annual report that the work of the field service is no longer a matter of examination of public land claims, as public land legislation of recent years has required the services of men having technical qualifications along mining, reclamation, hydraulic and chemical engineering, geology, gauging, accounting and valuation lines.

The commissioner refers to suits handled during the year, among them one involving 6,107 acres of oil lands valued at $10,000,000 in California, and nine others involving 1,396 acres of California oil lands, in all of which decisions were rendered in favor of the government. In Utah a compromise was reached in a suit against the Denver and Rio Grande Fuel Company by payment to the government of $44,244. Among indictments returned was one for coal trespassing in North Dakota.

During the year 477 mineral surveys, embracing 1,875 lodes, were made. Hydro-electric power permits were granted under the act of February 15, 1909, to the Ophir Mill Consolidated Mining Company for a power project in Utah. The acreage included in mineral entries approved during the year was 52,600. Eighty-five contests were received and 108 disposed of, leaving eighteen pending at the end of the year.

A part of the Cook Inlet coal field was surveyed and divided into nineteen leasing blocks containing 9,500 acres. One lease was awarded. An additional block of 565 acres in the Nenana Field was surveyed, for which a lease has been awarded. An application to lease 2,040 acres in the Bering River Field and another to lease 1,080 acres in the Matanuska Field are pending. There is under lease in the Bering River Field 4,500 acres; Mantanuska, 2,840; Cook Inlet Field, 1,400, and Nenana, 565.

Coal land entries covering 6,256 acres were approved for patent.

The commissioner says the mineral leasing law marks the beginning of a new epoch in the handling and distribution of the country's natural resources. He says the Mlning Acts of 1866 and 1872 were the greatest contributory factors to the unprecedented development of the productive resources of the country in the last fifty years, particularly in the west.

The commission reports that during the year 2,797 acres were withdrawn for coal classification and 1,293,307 acres previously withdrawn were restored. There were no withdrawals on petroleum, potash or oil shale, while 954 acres of withdrawn oil lands, 89 acres of potash and 3,880 acres of oil shale lands were restored.

HARDING TO CONSIDER WESTERN MAN FOR INTERIOR PORTFOLIO

IN RESPONSE TO A LETTER from the AMERICAN MINING CONGRESS, President-elect Warren G. Harding instructed his secretary to say he would consider carefully the claims of the west in choosing a new Secretary of the Interior.

The correspondence follows:

December 8, 1920.

HONORABLE WARREN G. HARDING,
Marion, Ohio.

MY DEAR MR. HARDING:

Permit me to present to you a situation in which I feel sure you will be interested.

The Rocky Mountain west has an intense interest in the work of the Interior Department. It is particularly interested because of the peculiar problems which the development of its natural resources present.

It is therefore greatly concerned in having a man selected as Secretary of the Interior who understands those problems peculiar to the western mining and arid land states.

In these states two systems of law prevail which are unknown elsewhere, viz.: the Mining and Irrigation laws; the first embracing the principle of extralateral rights embodied in the mining law; the other the principle of the appropriation of water to a beneficial use, as contravening the doctrine of riparian rights which prevails elsewhere.

The AMERICAN MINING CONGRESS has no candidates to recommend but it does earnestly urge that in the selection of a Secretary of the Interior you shall choose from among those who understand western conditions and who will therefore be better able to intelligently cooperate in the development of western resources.

The importance to the west of a proper selection of a Secretary of the Interior has been greatly intensified by the enactment of the leasing bill, by which the great dormant wealth of the west—its coal and oil reserves and its water powers—are forever to be supervised by the federal government.

If our organization can be of any service to you in this behalf, we shall be glad to place ourselves at your command.

Very respectfully yours,

THE AMERICAN MINING CONGRESS,
J. F. CALLBREATH,
Secretary.

MARION, OHIO, December 13, 1920.

MR. J. F. CALLBREATH, *Secretary*,
THE AMERICAN MINING CONGRESS,
Washington, D. C.

DEAR SIR:

Your letter of the 8th instant to Senator Harding, advising that the Rocky Mountain west has an intense interest in the work of the Interior Department, and suggesting an appointment as the head of this department one who understands the problems peculiar to the western mining and arid land states, has been before Senator Harding, by whom I am requested to say that he will consider all these matters in the choosing of a head for the Interior Department.

Yours very truly,
GEO. B. CHRISTIAN, JR.,
Secretary.

WAYS AND MEANS COMMITTEE HOLDS SPECIAL HEARING ON McFADDEN BILL

THE HOUSE WAYS AND MEANS COMMITTEE held a special session on December 10 in order to obtain the latest information concerning the condition of the gold mining industry. Addresses were made by President W. J. Loring and Secretary J. F. Callbreath of the AMERICAN MINING CONGRESS, by the former on the threatened complete loss of the country's gold ore reserves and by the latter on the necessity for maintaining the gold standard. H. N. Lawrie, economist of the AMERICAN MINING CONGRESS, made an extemporaneous statement in support of the constitutionality of the McFadden bill, the enactment of which both President Loring and Secretary Callbreath had advocated. A report of the hearing follows:

Part I—Mr. Loring: Total Loss of Gold Ore Reserves Imminent

THE CHAIRMAN: All right, Mr. Loring, we will be glad to hear you, if you will tell us how much is being produced, how much was being produced before the war in the United States, and how much is being produced now; what percentage of the producers are out of commission because of the high cost of production, and so on.

MR. LORING: The production of gold in the United States prior to its entrance into war in 1915 was about $100,000,000, and the production this year is estimated at less than $50,000,000. And, that is due to the high cost of production, high cost of wages, and supplies and power. To work it out on a percentage of the mines that have closed down would be a very difficult task. The low grade mines have all closed down. There are only the higher grade mines and those low grade mines having a rich vein in them that are now producing.

MR. GARNER: May I get you clearly? First, there are three things. First, there is labor costs, and the cost of supplies, and the power costs. Now, I understand about the labor and the supplies, but what increases the cost of the power?

MR. LORING: The power companies claim that the cost of producing power is a great deal higher.

MR. GARNER: It all goes back, as I understand it, to wages. The power companies charge more for the reason that it costs more to produce the power. It all really goes back to the supply of labor.

MR. LORING: To the increased cost of supplies and labor.

MR. GARNER: And as my good friend, Uncle Joe Cannon, would say, in the last analysis, it is the labor and supplies.

MR. LORING: That is right. Now then, to continue on the percentage basis as I said before, the low grade gold mines have closed down, every one of them, and that has been caused by these three items that I just referred to.

And, the low grade mines of this country are the mines that are the backbone of the gold industry, because they contain millions of tons of ore. They are already developed, equipped and were in going condition when they were forced to close down. They closed down because they could not meet expenses in treating the ore. They had been able to do it with a profit before the war and before the expenses appreciated. And, in some cases the mines have been abandoned. I know of several that have been abandoned and never will be reopened, but I know others that are operating their pumps at a very considerable cost in the hope that they will get relief.

And, without the relief that the McFadden bill will give a large number of these mines will go out of existence entirely, and when they do pass out of existence, there will be millions of tons of ore, containing millions of ounces of gold that will never be worked again.

Now then, so far as those mines are concerned, it would appear to me to be rather wasteful to have them pass out of existence and then search at a later date for new mines to replace those that we already know about and already have large ore reserves available. To keep alive these mines is our only motive, that they may produce the gold already in sight. They are already developed and equipped with large reserves of gold-bearing ore, and it is difficult these days to find new mines that will replace these old mines by searching for new ones to replace those that we already know about. The prospector has been driven from the field for the same reasons that have rendered gold mining unprofitable. The gold fields of the United States after the Civil War were largely unworked. Since then large volumes of rich placer gravel and quartz gold bearing ore have been removed, which seriously lessens the prospects now for the discovery of new gold ore reserves. If our present ore reserves are allowed to be wasted and become unreclaimable at a later date we cannot expect with success to replace them in the future. Relief must be provided now if the present developed gold tonnage is to be saved from total loss.

THE CHAIRMAN: If I am correct, I saw in August, I think it was, a statement—I was on the Pacific Coast at that time—that those mines in south Alaska——

MR. LORING: At Juneau and Douglas Island?

THE CHAIRMAN: Yes; that they had ceased producing gold altogether, discontinued, and have purchased from the government a large tract of timber land and have begun the production of pulp wood for paper. Those people have abandoned their mines altogether; that is, they have abandoned them for the present time as the cost of production is so high.

MR. GARNER: Mr. Loring, would you care if I asked you a question?

MR. LORING: I shall be glad to have you ask me any questions you may desire to.

MR. GARNER: I agree with you, as one member of the committee, that it is desirable not to close down these mines and that we ought to produce the gold in this country, just like we do any other commodity that is necessary for the transaction of the business of the country, but the reason that your gold production has been reduced is because it isn't worth as much as other articles that you can get for the same amount of money. Now, there has been a disposition among the American people, and it has been reflected through its legislatures, national and state, to reduce the cost of living. That tends to make gold worth more, does it not?

MR. LORING: Yes, sir.

MR. GARNER: So if they effect that, I say if they succeed, and if the American people get back to normal as they were prior to the war, and the labor costs and the supplies and the power cost is reduced to the pre-war cost, then you will be able to continue as before the war?

Mr. Loring: I would like to answer that—I am glad you asked the question. We never hope to get wages back to where they were before the war. Wages were very low before the war, but some other commodities, supplies and materials will come down, but I suppose it will be ten years before we can hope to get the cost of supplies and all other commodities and everything that goes to make up the working costs back to where they were before the war.

Mr. Garner: You think it will be ten years before the gold dollar will purchase as much as it did before the war?

Mr. Loring: Yes; I should say, emphatically, yes. Not only that, but such large sums of money have already been expended in the development of these mines that we are discussing now and that money is lost, because if a mine is once abandoned, there is a great deal of depreciation, which is very rapid. Water will rise in them and the timbers will rot—not under water, but the timbers will rot before the water comes up to the timbers—and the surface plant deteriorates very fast. The surface plant on a mine after it has closed down for two or three years would not be worth twenty-five per cent of the value when it was closed, due to the evaporation of moisture from the timbers and woodwork, and rust attacking the machinery. Further than that, these large gold mines in this country are not only very finely equipped with machinery and plants, but they have a large staff of very valuable officers who understand the mines and their peculiarities, and they are all different, every one having its own peculiarities. Those men get scattered all over the country and the first thing you know you haven't any men to start the mine up with.

The Chairman: What you are suggesting, Mr. Loring, before the committee that should be done, is——

Mr. Garner: What is your remedy?

Mr. Loring: The only remedy I can see is the McFadden bill. It will save a part of this industry, some of it. This will be some relief; of course, it will not cover the increased costs, but we think it will save a large number of mines from destruction and total abandonment.

Mr. Garner: This places a tax of ten dollars per ounce to be placed in the Treasury Department to be distributed among the gold producers of the country?

Mr. Loring: Yes, sir; the producers of new gold.

Mr. Garner: The producers of new gold?

Mr. Loring: Yes, sir; the producers of new gold.

Mr. Garner: The parties who pay for that are the parties who use the gold in the arts and sciences, or would that apply to all gold?

Mr. Loring: No; just to the arts and sciences.

Mr. Oldfield: Jewelry and things of that kind?

Mr. Loring: Yes, sir.

At the conclusion of the hearing on the gold situation, at which President W. J. Loring, Secretary J. F. Callbreath and H. N. Lawrie, economist, of the American Mining Congress, presented their views, the House Ways and Means Committee sent the McFadden Bill to the Attorney General for an opinion as to its constitutionality. The taking of this almost unprecedented step is an indication of the seriousness with which the members of the committee are considering the measure.

President Loring is recognized as one of the foremost authorities on the gold situation. He is president and general manager of the Carson Hill Gold Mines Company, president and general manager of the Pacific Coast Gold Mines Corporation, managing director of the Plymouth Lode Gold Mines, Ltd., and president and general manager of the Pacific Tungsten Company, as well as a director and managing director of several other companies.

The Manufacturing Jewelers' Association of New York, which opposes the McFadden Bill and charges it is class legislation, has asked for a further hearing before the Ways and Means Committee.

The Chairman: If I am correct in my recollection, it was stated here last spring when we had these hearings that in the United States at the present time \$75,000,000 to \$80,000,000 per year were used in the manufacture, in arts and industry, is that correct?

Mr. Loring: Yes, sir; about \$81,000,000 for 1919.

The Chairman: About \$81,000,000 per year?

Mr. Loring: Yes, sir. The consumption of gold during 1919 was some \$21,000,000 more than the production for the same period, more than the production out of the gold mines of the United States.

The Chairman: And that year we produced about \$58,500,000 worth of gold?

Mr. Loring: Yes, sir.

Mr. Garner: I did not quite get that.

The Chairman: They used about \$21,000,000 more of gold in the manufacture, in arts and sciences in 1919 than was produced in the United States.

Mr. Loring: Yes, sir.

The Chairman: And we produced about \$58,500,000 for that year.

Mr. Garner: About \$81,000,000 worth used in the arts and sciences during the year 1919?

Mr. Oldfield: That all came out of the treasury, out of the bullion? That was probably old stuff that was probably reworked; you do not mean that that came out of the treasury?

Mr. Loring: I do not think that it was all new gold, but there was not a great deal of old gold. I think about three and one-half million dollars of it was gold coin that was used.

The Chairman: Here is a statement by some gentleman at that time. Well, without looking up who it was, the gold is not consumed or destroyed in its use in the arts, which is clearly substantiated from the fact that the gold held by the Federal Reserve Board at present amounts to \$1,953,103,000, approximately equaling the total production of gold in the United States during the last twenty-four years, or from 1895 to date. Well, but he does not include the importation of gold. He is speaking of the production. He states furthermore, that the proponents of this measure point with alarm to the amount of gold that is going into the arts. Well, he does not include everything there and by years.

The actual figures in that connection follow: 1914, \$45,520,000; 1915, \$37,820,000; 1916, \$54,061,000; 1917, \$52,915,000; 1918, \$52,409,000. Then he goes on, but he does not cover all of the points that are covered by the men that are in favor of this bill.

Mr. Loring: I would like to give you a few little details in closing, about some particular cases that I am connected with that might be of interest to you.

One mine was reopened in 1914 at a cost of nearly \$1,000,000. We began our milling operations in 1914. At the first the working cost was \$2,89 per ton. Its cost has risen until it is \$5.99 at the present time. Now, that is an extreme case.

I have another one that we expended a little over \$1,000,000 upon and developed 800,000 tons of ore. That was ore before the war, and the cost for carrying on that operation has increased until it exceeded the value of the ore by $1.58. So, we have had to close that property down, but we still keep the water out of the mine, hoping to get some relief.

The Chairman: Where is that mine situated? Where is it located?

Mr. Loring: That mine is located in California; both of these mines are in California.

The Chairman: Well, the appeal that you are making to the committee or the request is that Congress place a tax upon the gold bullion used in manufacturing for the benefit of the producer on the gold to be distributed in the amount of gold each operator produces?

Mr. Loring: That is right.

The Chairman: In order to bring back normal production of gold?

Mr. Loring: Yes, sir.

The Chairman: The price of gold did not decrease in value, but the cost of production has more than doubled up during the war?

Mr. Loring: That is so.

The Chairman: As a result of that, all these mines are running on a smaller margin of profit?

Mr. Loring: Yes, sir.

Mr. Garner: Mr. Loring, have you ever had an attorney look into the constitutionality of the proposition of the power of Congress to levy this kind of a tax for the purpose for which it is proposed to levy it?

Mr. Loring: I have not. Perhaps Mr. Lawrie could answer that question.

Mr. Garner: That was just a thought which occurs to me that the constitution says something about the power of Congress to levy taxes and the purposes for which levied. You know some of our friends sometimes levy taxes for protection, but they always put in "for revenue" so as to get by the Supreme Court, and I was just wondering whether any question of constitutionality with regard to levying taxes, Congress levying taxes on certain people for the purpose of transferring that money to some other people in the United States, had ever been raised. I do not think that I have ever heard of that kind of a proposition before. It has never come under my observation. I was just wondering whether that question had ever been raised.

Mr. Loring: I think probably Mr. Lawrie can answer that question.

Part II—Mr. Lawrie: McFadden Bill Constitutional

Mr. Lawrie: The subject of the constitutionality of this bill was discussed briefly before the last hearing upon the adjournment of Congress and at that time Mr. McFadden made the suggestion of an amendment for the heading of this bill which would show that it was for the purpose of levying taxes for revenue, as well as for the other purposes contained in the act. That upon the point of the constitutionality, there could be very little question. Inasmuch as the government had already fixed the price of gold, it should also have power to administer and to so change it as to insure the production of new gold in the country. If the government has the constitutional power to fix the price, I believe that the provisions of this bill as above amended would be constitutional.

The Chairman: Thank you.

Mr. Loring: I desire to thank you for the opportunity of appearing before the committee.

The Chairman: We want to thank you, Mr. Loring.

Mr. Garner: I want to suggest, Mr. Chairman, that if this bill is going to be taken up in executive session and gone over it might be wise for the clerk to refer the bill to the Attorney General. It does seem to me that there is some question as to the constitutionality of it, and the very fact that the proponents of the bill suggest to add "for revenue" shows that there is some thought among themselves that it might be wise to get under protection.

The Chairman: I think that would be a wise thing to do before we take it up for final consideration, to get the opinion of the Attorney General in the matter. Thank you, sir.

Mr. Timberlake: Mr. Chairman, Mr. Callbreath, Secretary of the American Mining Congress, is here and Mr. Garner asked a question of Mr. Loring as to when, in his opinion, normal times would come in this country with regard to the reduction of the cost of labor, and so forth, and Mr. Callbreath would like to reply to that question.

The Chairman: We would be glad to have him do that.

Part III—Mr. Callbreath: New Gold Needed To Sustain Gold Standard

Mr. Callbreath: Mr. Chairman, the question of when prices will assume their old-time levels is one which compasses the economies of the world.

Our prices are fixed in gold standard countries upon the level of the gold which maintains those prices. We had in the whole world prior to the war about ten billion dollars worth of gold. That amount remains practically stationary now. We had in this country one and three-quarter billions of gold at the outbreak of the war. During the first two years of the war we took from Europe about one and one-quarter billions of gold so that our gold stock in 1917 amounted to about three billions of dollars, or practically one-third of the gold supply of the world. Since then we have lost by exportation about a half billion dollars of gold.

Prior to the war, with our one and three-quarter billion dollars worth of gold and our credit money about one-sixth of what it is now, we had difficulty at times in maintaining our credit. That was illustrated very vividly by the panic of 1907. During a time when every wheel of industry was in operation and every man who would work was employed at the highest wages then known in the history of the country, out of a clear sky came a panic which wrecked business and destroyed our credit at home, and had it not been for the fact that our banks closed down their paying tellers' windows and practically repudiated their obligations, we would have been wrecked with a panic from which it would have been extremely difficult for the country to recover.

That panic proved that the then structure of credit was fully as large, if not larger than the then foundation of gold was able to support. Since that time we have increased the structure of credit manyfold, and the present structure now sustained by our two and seven-tenths billion dollars of gold is many times greater in proportion than the credit structure based on the one and seven-tenths billions of dollars of gold before the war.

We have taken one and one-fourth billion dollars' worth of gold out of European countries which we now have in this country. We find our business industries stagnant largely because of the fact that European nations lacking this gold have neither money nor credit with which to buy our materials. Europe is today hungry for our copper to rebuild their industries, and in this country we have large surplus stocks of copper and our production is being cut to nothing practically because of the fact that Europe is not able to take the copper, which they need, but lack the money with which to buy.

Mr. Garner: They have not?

Mr. Callbreath: They have not the money nor the credit with which they can buy. Under those conditions our industries are stagnant because European finances are not where they ought to be.

Today in London British exchange is very much below par value of her gold. In other words, her money is at a discount. We have in this country been able to maintain our money at par, because we have more than our share of the world's gold supply.

The Chairman: Isn't it true that the war has destroyed a great deal of property and that——

Mr. Callbreath (interposing): That is true.

The Chairman: The world war has destroyed a couple of billion dollars' worth of property, and because of that we have the situation which is existing today.

Mr. Callbreath: When are we going to get back to normal conditions? It is going to take years to get back to normal. European nations will have to rebuild their credit and will undoubtedly draw on our gold reserves for that purpose. When that time comes we are going to have even a greater problem than we have now, to maintain a free gold market and keep our currency at par. So, it seems to me that it is very important that we shall maintain our gold reserves at the highest point possible to do by any reasonable means.

I do not believe that any of you gentlemen believe that wages will ever again get back to pre-war levels. It certainly would mean a trail of disaster to the country if such a condition should come in a brief period of time.

The Chairman: Then, the cost of living can never get back.

Mr. Callbreath: No, we never will get back to the pre-war prices. I have studied the matter rather carefully, and it seems to me that the most that we can hope for is to get back to about one-third above that level.

The Chairman: Cotton has gotten back to the prewar level.

Mr. Callbreath: True, but it is not being sold and the production of cotton is being curtailed.

Mr. Copley: What about wages, at the same time that we reach the level of one and one-third of the prewar rate of wages as compared with that period of the pre-war?

Mr. Callbreath: The rate of wages will be very much above that level.

Mr. Copley: Very much above the one and one-third, but living expenses will be reduced to that?

Mr. Callbreath: They will be reduced to that point, but that will mean that profits will be proportionately less than they are now.

The Chairman: In Germany today the wages are lower than they were before the war.

Mr. Callbreath: Well, I do not think that we can learn very much of a lesson from the situation in Germany, nor in any other country in which they are so impoverished that industry is practically paralized. The point I want to impress upon you gentlemen is this, that if we are to protect our credit we must have gold with which to do it. We can not get more gold from foreign countries without further decreasing their purchase power in our market. We have got more than our share now and we must anticipate the probable loss of some to those countries in greater need.

The Chairman: You advocate the passage of the McFadden bill?

Mr. Callbreath: Yes, sir; because it seems to me to be the best remedy now available. I do not say that I believe that it is a complete remedy, but that it is a remedy which will enable us to keep up the production of gold, thereby conserving our present supply of gold.

Our gold reserve seems to me very much like a tank from which we draw our supply of water with a stream flowing in at the top while we are drawing water out at the faucet. We may draw off a few barrels more than the intake supplies today, because we may need it, and we may not need so much tomorrow, but the continuous inflow of newly produced gold will sustain our confidence that the supply will always be sufficient?

Last year $21,000,000 more gold for industrial purposes was consumed than the mines of our country produced. I do not think we should continue to depreciate that reserve to which we look to support our credit, and if we do sooner or later we will get to a point where we will feel doubtful as to the sufficiency of that reserve.

Director of Mint Reports Busy Twelve Months

A GREATER NUMBER of coins has been turned out than during any preceding year, and the mints are still working twenty-four hours daily, according to the annual report of Raymond T. Baker, director of the Mint. During the year 809,500,000 pieces of money were coined, 76,000,000 of which were for foreign governments.

New methods have been adopted and improved appliances installed, with the result that estimates for the mint service for next year have been reduced nine per cent. Chief among the mechanical changes has been the installation of large electric furnaces in place of small gas and oil-burning equipment. At Philadelphia an electric furnace of 1,000 pounds capacity displaced four gas furnaces, effecting a fuel saving of fifty per cent. Installation of mechanical conveyors for ingots, strips, discs and coins, which formerly were handled by hand, resulted in a saving estimated at between forty and fifty per cent. A tandem arrangement of six rolling machines worked a reduction of 75 per cent in operating expense and an automatic attachment for disc cutting machines resulted in an 80 per cent saving. Additional electric furnaces of half a ton capacity each were installed at Philadelphia and San Francisco. Further changes are being made at San Francisco, and the Denver mint will next receive similar attention.

The Secretary of the Treasury estimates the cost of repairing the New York assay office, damaged by the Wall Street explosion in September, will be $75,000.

States Regulate Mines

THIRTY STATES have coal mines, and twenty-eight of them either by general law or through commissions regulate the operation of coal mines, according to the U. S. Bureau of Mines. The Bureau groups these codes as follows: Distinctly coal mining, twelve; essentially coal mining, eight; partly coal mining, five; essentially metal mining, but applying wholly or partly to coal mining also, four. Pennsylvania, which in 1869 became the first state to enact a coal mining law of any kind, has separate codes for anthracite and bituminous fields.

METHODS AND PROBLEMS OF FEDERAL TAXATION OF THE MINING INDUSTRY

By J. C. Dick.

THE SUBJECT OF TAXATION is a very vexatious and troublesome problem, yet from personal necessity on the one hand, and patriotic duty on the other, it commands our attention and best efforts for proper solution so that industry will not be throttled, but will move with accelerated speed in order to carry the great burden that the recent war placed upon the nation.

If the public utterances of some of our greatest statesmen and politicians of either party during the recent campaign are in harmony with the thought of Congress, we can look for radical changes in the present tax law. It may be difficult for some to conceive of a just tax on corporations that does not give due consideration to the capital invested as well as the income derived from the investment. However, regardless of repeals or modifications or substitutions these changes can not materially lessen the tax burden; making laws will not decrease the public debt—that will be dissipated in the direct ratio of increased efficiency throughout the entire industrial United States. Our aim should be one hundred per cent efficiency, and that can be realized only when all economize to the limit as well as spending every effort to increase production.

The word "slacker" coined during the war is quite applicable to any individual in this country who, during this reconstruction period, will not take hold of the wheel of progress and assist in forcing it to revolve in its normal manner. To my mind, a campaign of publicity along these lines would do more to lessen the tax burden than the making of untried laws. No tax law can be enacted that will function with equal justice toward all the diversified interests of our vast republic, but we might correct the imperfections in the present law as time and experience dictate rather than go into unknown and speculative fields for a new system that means but little other than changing the form as to how this government shall assess the four billions of money that are needed annually. It is not my province to extol the virtues of the present tax law, but whether it is good or bad it is on the statutes and as a government employee in my present capacity my work is to assist in the administration of the act as it stands, and Regulations 45, which has been cussed and discussed, is still the primary, as it is also the post-graduate textbook, in the internal revenue school of taxation.

J. C. DICK

Chief of the Subdivision of Natural Resources Bureau of Internal Revenue

One feature of government work, I have noticed, is that the individual believes that the particular section in which he toils is the most important one in the Bureau. I shall refer to the Natural Resources Subdivision of the Income Tax Unit, because it is the most important to members of the American Mining Congress.

This subdivision was created to handle all cases requiring valuation for depletion purposes, and the function of the valuation sections is to examine the tax returns and the data that the taxpayer submits as to his valuation and determine whether or not the depletion deduction made in the return is a reasonable one. When the valuation sections were first organized the manner in which valuation should be made, or rather the yard stick that the bureau should use to test the valuations made by the taxpayer, was discussed at great length for some months prior to beginning work. Engineers from the oil industry were brought into the bureau to handle valuation problems of oil and gas properties; engineers from the metal mines were secured to handle problems relating to metal mines valuation, and likewise engineers from the coal and timber industries to handle their particular problems. There are still a number of cases in the valuation sections of the Natural Resources Subdivision awaiting information from the taxpayer relative to the determination of his depletion deduction. A brief outline of the work being done may answer the inquiry, "Why still worry the taxpayer?"

To get at the fair market value of the property as of any particular date requires the most intimate knowledge of its condition at the specified time. In order to learn of this condition, questionnaires were compiled for the different industries and sent to the taxpayer to assist him in furnishing necessary information required to get at a fair value. There have been a great many criticisms as to the form of this questionnaire and the form can probably be improved, and yet as the questionnaire must fit all cases it includes not only the questions pertinent to an individual case, but is sufficiently broad in scope to comprehend any and all cases that might arise in the given industry. The results the department gets are quite varied. In some instances all the questions are answered and the questionnaire of the taxpayer is completely filled out. In other cases the information contained is meagre and necessitates correspondence before the value can be fairly determined. The valuation engineer must see that the valuation submitted by the taxpayer has been substantiated in order to arrive at a reasonable depletion based thereon, as no depletion deductions are allowed until the fair value is determined. It is therefore absolutely necessary that this valuation data be submitted, or an unavoidable injustice might be done the taxpayer in determining his tax.

To substantiate this value as of March 1, 1913, the engineer examines the questionnaire to see whether or not there are sales on or about the specified date that would determine the market value, or if there had been leases given about that time on this or similar properties, where the royalty rates in the agreement would reflect the value of the mineral in the ground, or whether or not there have been sales of similar property in the neighborhood that would reflect the value of the taxpayer's property. By investigating the profits made in 1913, the taxpayer's valuation may be checked by estimating the probable profits over a term of years and these profits reduced to the present value.

In a valuation of this kind there are several factors of a debatable character that enter into the computation, namely, the mineral reserves, the price at which the product will probably sell during the life of the property, the operating cost of production, the discount rate that should be used in reducing the estimated profits to a present value, and the necessary plant and physical equipment that will be necessary to derive these profits. In applying this method for a metals valuation, the engineer would use the tonnage grade of ore and production cost set forth in the questionnaire and substantiated by the records. The rate of production is determined by investigation of the operations of the taxpayer at the date of valuation, and also taking into consideration the economic conditions, which factors determine the probable life of the property.

The price for which the product will sell during future years and the rate of interest that should be applied to reduce the operating profits to present worth have been much debated and are questions upon which there was a great deal of technical discussion a year ago. In the case of metal mines, viewing the conditions as of March 1, 1913, it was determined that 65 cents an ounce would have been a fair price for silver, that 4½ cents a pound would have been a fair price for lead, that 16¼ cents would be a fair price for copper, that $5.70 would be a fair price for zinc, etc. In the matter of discount rates it was thought advisable to use a rate of interest commensurate with the risk involved in the enterprise and a safe rate to apply for return of capital. Where the ore is practically assured an interest rate of seven per cent on investment and four per cent for return of capital is used; where the ore is but partially developed, the interest rates increase to as high as 20 per cent when the risks in the enterprise seemed to warrant such high expectancy of profit. There has been a great deal of debate as to why the Government uses these two rates rather than a straight discount rate. There is no necessity of entering into a technical discussion of the merits or demerits of this plan that assumes the total operating profits are returned in equal annual installments and consist of two parts, first a fair rate of interest on the investment, and second, a definite annual sum which, at a safe rate of interest compounded annually, will redeem the investment.

Whatever method has been used by the taxpayer to determine the value of his property, the questionnaire requires that answers be made to all questions and thus supply the means of checking up the result. The regulations prescribe no method but state that due consideration will be given all factors, such as cost, actual transfers of similar property, royalties and rentals, appraisals by approved methods, market value of stock, and others. All these factors are given consideration in the valuation section. After the depletion has been determined the case goes to the audit section where in connection with the field agent report, all other questions in the returns of the taxpayers are examined. This subject has been rehashed and is old, but has been reviewed briefly in the hope that it might show the taxpayer whose property is not yet valued the necessity of promptly supplying the data requested by the bureau.

Referring briefly to changes in the law, among those suggested might be listed depletion as a percentage of income rather than depletion on unit cost.

The regulations prescribe how the taxpayer shall derive the unit of depletion in order to determine the deductions from income. It does not suggest a percentage of income as a depletion deduction, and I understand there is doubt as to the present law permitting a regulation prescribing such a method. Though it may have no foundation in law, and to a great many not sound in principle, it nevertheless appeals strongly to me, and believe it has considerable merit.

Where a property has been purchased for cash, or where this value may be ascertained by the sales of similar property on a normal market, or can be fairly determined by the prevailing royalties or rentals of similar property during a normal period, these transactions probably establish the fair market value. Sales of similar property during periods of depression or boom periods do not fairly nor equitably determine a basis of valuation that results in a reasonable depletion when you apply the unit method, yet said sales value may reflect the fair market value of the taxpayer's property at the specified rate.

Properties that have a history, with assured ore bodies so that the future spread of profits can be determined with sufficient accuracy, may permit a willing buyer and a willing seller to agree upon the purchase price, and yet the unit method of depletion might not accurately measure the actual depletion of capital value sustained during the future operation of the mine.

To illustrate: Suppose we have a mine of 1,000,000 tons of ore in 1920; that we can foresee the economic conditions that will prevail during the next ten years and can ascertain definitely that in 1921 to 1923 the operating profits will be $1 a ton, from 1923 to 1926 we can make $4 a ton profit, from 1926 to 1927 $2 a ton profit, and from 1927 to 1930 $1 a ton profit, or a total of $2,000,000 operating earnings. Let us further assume that conditions are such that we must mine at the rate of 100,000 tons annually and that we had paid for the mine $1,000,000. Would we deplete the mine at $1 a ton annually, or on the basis of 50 per cent of the profits? I think the depletion account kept on a basis that would represent the ratio of cost to known value of ore reserves; namely, on a percentage of profits basis, would more accurately measure the true depletion.

The fair market value, as determined by the present value method, may be a close approximation of the truth, but a depletion deduction from income, based upon a percentage that comprehends the relationship of cost and earnings, or the anticipated spread of profits that was used in the calculation for valuation, more accurately expresses the true depletion that the ore reserves suffer annually. In the illustration used above, whether you take 50 per cent of your income as an annual deduction for depletion, or deplete on a unit method basis of $1 per ton, you obtain a million dollars of capital value through depletion deductions during the ten years. But as you did not sustain like depletion annually, would it not have been more logical to have taken depletion on actual amounts sustained, or 50 per cent of the profits? If it were logical in this case, it seems to me it would still be more so where the ore reserves, cost of production and sales price of metals are but an approximation.

The percentage of income as depletion deduction will return to the taxpayer as a much closer approximation to the intrinsic value of the property than a unit method of depletion would, and in any appraisal method the closer the fair market value approaches the intrinsic value, the more accurate was the appraisal. Likewise, as the percentage method of depletion more closely approaches the true depletion, to that extent does the true depletion approach the reasonable depletion mentioned in the law.

TWO LABORATORY CARS TRANSFERRED TO BUREAU OF MINES

TWO TRAVELING LABORATORY cars, the Hamilton and Wyman, belonging to the Public Health Service and used in epidemic work, have been transferred to the Bureau of Mines, having completed their work for the Public Health Service.

One of these cars, the Hamilton, has been sent to Terre Haute, Ind., to take the place of the mine rescue car formerly stationed there which was destroyed by fire. The other car, the Wyman, will be used as a laboratory car in the field work of the bureau in the sampling and the classification of coals. The coal sampling crew will live on the car, which will also contain the machinery and laboratory equipment for the crushing and preparation of the coal samples.

MINERAL LANDS CLASSIFIED

THE SECRETARY OF THE INTERIOR in his annual report states that on July 1 coal lands had been classified and appraised as follows:

	Acres.	*Valuation.*
Arkansas	60,715	$1,473,762
California	7,720	585,086
Colorado	2,885,137	196,199,767
Idaho	4,603	89,624
Montana	5,781,986	137,560,696
Nevada	6,803	126,830
New Mexico	657,428	16,198,951
North Dakota	11,409,849	199,383,866
Oregon	7,195	174,843
South Dakota	244,874	2,711,462
Utah	1,069,871	45,101,333
Washington	2,706	88,360
Wyoming	7,239,055	387,794,213
	29,377,942	$987,488,793

During the year only 954 acres of oil lands were restored to entry. All of this acreage was located in Montana. Outstanding withdrawals of oil lands on July 1 were as follows:

	Acres.
Arizona	230,400
California	1,257,229
Colorado	222,977
Louisiana	467,030
Montana	1,350,937
North Dakota	84,894
Utah	1,962,787
Wyoming	1,181,626
	6,757,880

Gold and Silver Movements

THE FEDERAL RESERVE Bulletin gives the following official report of gold and silver movements:

During the month ended November 10 the net inward movement of gold was $62,519,000, as compared with a net inward movement of $56,503,000 for the month ending October 10. Net imports of gold since August 1, 1914, were $816,229,000, as may be seen from the following exhibit:

[In thousands of dollars.]

	Imports.	*Exports.*	*Excess of Imports Over Exports.*
Aug. 1 to Dec. 31, 1914	23,253	104,972	*81,719
Jan. 1 to Dec. 31, 1915	451,955	31,426	420,529
Jan. 1 to Dec' 31, 1916	685,745	155,793	529,952
Jan. 1 to Dec. 31, 1917	553,713	372,171	181,542
Jan. 1 to Dec. 31, 1918	61,950	40,848	21,102
Jan. 1 to Dec. 31, 1919	76,534	368,185	*291,651
Jan. 1 to Nov. 10, 1920	333,775	297,301	36,474
Total	2,186,925	1,370,696	816,229

*Excess of exports over imports.

England furnished $82,053,000, or over 86 per cent, and France $5,571,000 of the $95,060,000 of gold imported during the monthly period ending November 10, Columbia, Canada, Sweden, Australia, and Mexico furnishing most of the remainder. Of the gold exports, amounting to $32,541,000, over 85 per cent, or $27,942,000, was consigned to Japan, $3,000,000 to China, and the remainder principally to Hongkong, Mexico, and Canada. Since the removal of the gold embargo on June 9, 1919, total gold exports have amounted to approximately $651,097,000. Of this total, $174,407,000 was consigned to Japan, $146,555,000 to Argentina, $69,330,000 to Hongkong, $67,396,000 to China, $40,812,000 to British India, $29,778,000 to Spain, and the remainder principally to Mexico, Uruguay, the Dutch East Indies, the Straits Settlements, Canada, and Venezuela.

During the same monthly period the net outward movement of silver was $282,000, as compared with a net inward movement of $1,308,000 for the month ending September 10. Net exports of silver since August 1, 1914, were $454,571,000, as may be seen from the following exhibit:

[In thousands of dollars.]

	Imports.	*Exports.*	*Excess of Exports Over Imports.*
Aug. 1 to Dec. 31, 1914	12,129	22,182	10,053
Jan. 1 to Dec. 31, 1915	34,484	53,599	19,115
Jan. 1 to Dec. 31, 1916	32,263	70,595	38,332
Jan. 1 to Dec. 31, 1917	53,340	84,131	30,791
Jan. 1 to Dec, 31, 1918	71,376	252,846	181,470
Jan. 1 to Dec. 31, 1919	89,410	239,021	149,611
Jan. 1 to Nov. 10, 1920	79,856	105,055	25,199
Total	372,858	827,429	454,571

Mexico furnished $2,288,000, or almost one-half, and Peru $1,038,000 of the $4,645,000 of silver imported during the monthly period ending November 10, most of the remainder coming from Chile, Bolivia, Honduras, and Canada. Of the silver exports, amounting to $4,927,000, about 45 per cent, or $2,246,000, was consigned to Japan, $1,555,000 to China, and the remainder principally to Hongkong, Mexico, and Canada.

THE NEW CHAIRMAN OF THE HOUSE COMMITTEE ON MINES AND MINING

IN 1811 Henry R. Schoolcraft was sent out by the federal government and the governor of New York to do scientific and research work in the Ozark region of the Louisiana Territory. In those early days mining in what is now the southeastern part of Missouri was a developed industry. At Herculaneum, Moses Austin, who owned three shot-towers and most of the acreage surrounding their base for many rods in every direction, made bullets which General Andrew Jackson used at the battle of New Orleans. When Schoolcraft visited the lead works at Mine La Motte he—as he himself wrote later on—"observed a peculiar blue flame given off in the process of smelting, indicating the presence of cobalt."

Exactly one hundred years later cobalt was first mined in Missouri, and when the year 1920 passed into history, Missouri was the only state in the Union producing cobalt, with the possible exception of Idaho. Mine La Motte was still a paying proposition, Missouri was foremost in the production of lead, second only to Georgia in its output of barytes and maintained a respectable position in its output of zinc. And much of the state's pre-eminence in respect to these minerals was due to the production of the mines of southeastern Missouri, in the Thirteenth Congressional District.

Hence it was not at all surprising that upon the death of Representative Mahlon M. Garland, of Pennsylvania, the House Committee on Mines and Mining should look to the Thirteenth Congressional District of Missouri for a new chairman. Representative Marion E. Rhodes comes from Potosi, which was very much in existence when bullets for General Jackson were being made at Herculaneum and when Schoolcraft observed the peculiar blue flame at Mine La Motte, and is not a very great distance from either place. Mr. Rhodes, who is a lawyer, has been associated with mine operators and mine employees and interested in them and the welfare of the mining industry all his life, and whatever influence he as chairman of the Committee on Mines and Mining can exert in their behalf will be but a continuation of efforts which, upon a somewhat less extensive scale, he has long been accustomed to make.

Mr. Rhodes was in Congress once before, having been elected in 1904. He at once attempted to protect American barytes producers against German importations by having enacted a proper tariff measure, introducing the first bill for this purpose ever prepared. His measure was not enacted into law during his term as Congressman, but its provisions were incorporated in a tariff law which subsequently was put into effect, with the result that the barytes production of Missouri and the United States prospered. The Underwood Tariff Act of 1913 put both crude and manufactured ore on the free list, allowing only a small duty to remain on the chemically refined products, including chloride, dioxide and carbonate. While importations began to increase at once, the war, which by 1918 had completely shut off German dumping, served all the purposes of a protective tariff, but the return of peace has brought about a competition which now threatens the American industry with complete extinction. And, as might have been expected, Representative Rhodes has assumed the task of giving the industry the needed tariff protection.

Missouri ore sells for $10 per ton, f.o.b. shipping point. Freight to New York, Boston or Philadelphia is $9.50 per ton, making the f.o.b. seaboard price on the American commodity $19.50. But German producers are laying the crude down in New York for $12 and less per ton. For the manufactured article the figures are: St. Louis market, $24.50; package, $3; freight, $9.50; total, $37. But the German manufacturers quote a price of $23.60 for delivery at either New York or Philadelphia. The American product cannot even attract attention in such a market as this; hence it is no wonder that Representative Rhodes has been receiving calls for help since September, or that he is receiving every day letters from American manufacturers and producers giving reports of the arrival of huge German shipments and stating that the writers will soon have to go out of business, if they have not already done so. Representative Rhodes now has a bill before the Ways and Means Committee and the Tariff Commission which, if enacted, will place a duty of $10 per ton on the crude and a graduated tariff on chemicals running as high as $25 per ton. It is designed to give the necessary relief and Mr. Rhodes intends to keep behind it until it is enacted into law.

All the lead companies, Representative Rhodes says, are either closing down or posting notices reducing wages from twenty to thirty per cent on January 1. Mr. Rhodes will ask the Ways and Means Committee during the forthcoming tariff hearings to impose a duty of 1½ cents per pound on the metallic content; or, in other words, to return to the schedules of the Payne-Aldrich Law.

"On account of the general depression which is affecting all interests, the mining industry of the country is suffering," Mr. Rhodes said. "Upon the reorganization of the House Committee on Mines and Mining, and my assumption of the chairmanship, after reviewing mining conditions generally, I stated to the committee members that it was my hope that our committee could do something to relieve conditions. While the committee has not gone so far as to agree upon any definite line of action, its members are in sympathy with the suggestion that something should be done to relieve conditions as far as possible. The committee has recommended the passage of legislation to suspend assessment work for 1920 on mining claims in the hope that claimants may not lose their claims on account of not having been able to do work necessary under the mining laws. There are other bills before the committee relating to mining matters which will be taken up the first of the year."

In other words, neither the cobalt mines of Missouri, nor any other kind of mine of Missouri or any other state, shall be permitted to lie dormant for another hundred years, or any part of one hundred years, on account of the importation of foreign ores produced by laborers paid in money worth a nickel a wagonload, if the new chairman of the House Ways and Means Committee can prevent it.

FEDERAL WAR TAX SETTLEMENT BOARD AN URGENT NECESSITY

By Robt. G. Wilson,

Chief of the Tax Division of the American Mining Congress.

THAT THE CREATION of a Federal War Tax Settlement Board, as recommended to Congress by the American Mining Congress, is not only advisable, but a most urgent necessity, is the opinion of business men and taxation authorities in widespread comment upon the proposal.

"The government is using pick and shovel methods to work a mine where blasting and steam shovels are needed," is the appropriately expressed view of the present situation by Prof. Carl C. Plehn, economist of the University of California and prominent writer on taxation. "I wish to say, as emphatically as possible, that a federal board of adjustment to deal with the accumulated returns of income and excess profits taxes is absolutely necessary."

Prof. Robert M. Haig, of Columbia University, expressed himself similarly. "I thoroughly approve of what the report of the Committee on Taxation of the American Mining Congress says of the urgency of the situation and of the necessity for such action as will result in speedily fixing the precise liability of taxpayers," said Professor Haig, who is well known as an authority. "We must at once radically improve our income and profits tax administration if we are to escape very serious fiscal and economic consequences."

C. B. Hurrey, until recently Deputy Commissioner of Internal Revenue; Robert N. Miller, ex-Solicitor of Internal Revenue; C. M. Zander, chairman of the Arizona Tax Commission, and many others experienced in tax administration, have also joined with taxpayers in the appeal for a definite and authoritative settlement of cases consequent upon the war-time period. The reasons are many and varied, but largely relate to justice to the taxpayer, much-needed income to the government and relief to the Revenue Bureau. There are those who feel that the settlement board might be attached to the bureau, but the majority opinion inclines to the belief that it would function more effectively if independent of all existing departments.

GEORGE E. HOLMES

Member of the Tax Committee of the American Mining Congress, who collaborated with Prof. Haig, of Columbia University, on one of the most valuable and authoritative contributions of the year on the subject of taxation, "The Taxation of Excess Profits in Great Britain," a study of the British "duty" in relation to the problems in the United States. Both Mr. Holmes and Prof. Haig are warmly supporting the American Mining Congress proposal for a Federal War Tax Settlement Board.

Professor Plehn holds that "with billions of dollars at stake it is worse than penny-wise and pound-foolish to delay. It is fundamentally wicked to hold up tax settlements for five years. They hang like a great rock suspended by a thread over the head of industry, and threaten to fall when industry is at its weakest. If you will look at page 3 of the Digest of Income Tax Rulings you will see that there are ten different official sources of rulings on income tax decisions. If you will read any hundred such decisions, selecting ten from each source, you will find numerous inconsistencies, often flat contradictions. Added to this confusion are the unrecorded and arbitrary decisions of 'auditors' and 'inspectors' who often deal with industries and accounts of which they have less than an elementary understanding. How far would you get in operating a big mine if you had ten independent sets of orders going out to gang bosses who had never been in a mine before?

"There are many radical reforms of administration necessary before we can have a workable income tax. But the first thing, the most pressing thing, is to clean up the past output, to get the ore that is above ground into the smelter and the metal out."

Professor Haig, with the assistance of George E. Holmes, of the American Mining Congress Tax Committee, recently completed a volume on "The Taxation of Excess Profits in Great Britain," a study of the British systems in relation to the problems of taxation in the United States. In it he points to the highly successful boards of referees, which have long been a part of the British income tax procedure.

In view of Prof. Haig's intensive study in England of the administration of heavy taxation, his opinion on the urgency of creating a settlement board in this country was particularly sought. In gladly replying he refers to the fact that under the British system a condition like that now confronting us is quite impossible. "There," he describes, "the accounts are carefully examined and the tax liability determined by a capable government assessor, before the tax is assessed or collected, and their force of civil servants has proved equal to the task of keeping up to date with its work. They have the fullest possible provisions for appeals to administrative authorities and to boards organized and operating on the principle of arbitration by disinterested outsiders.

"Our civil service, in spite of its best efforts, has fallen far behind and unless some emergency organization is supplied it is difficult to see how the situation can be met," he informs the MINING CONGRESS. "A board of special commissioners, such as you suggest, would undoubtedly command the respect of the taxpayer and would deserve the confidence of the government. Congress should not hesitate to vest such a board with power to arrive at agreements with the taxpayer. The interests of the government would receive proper consideration.

"In the case of such taxes as the income and profits tax, the liability of the taxpayer rests to a very material extent upon items which represent mere estimates and valuations. There is a possibility of wide differences of opinion between the government and the taxpayer as to the correctness of these items and there is usually no absolute standard for determining which view is right. The only way to settle the problem satisfactorily is for the government to establish some body in whose intelligence and fairness the taxpayer has confidence, and to give power to this body to make decisions as their judgment may dictate after full consideration of the facts. The British, who have had eighty years of continuous experience with income taxation, fully appreciate the necessity of elasticity in administration and grant to their local assessors, as well as to their higher officials, what seems to us to be an amazingly large degree of latitude in arriving at agreements and compromises with taxpayers. It would be foolish for us at this juncture to decentralize our system and vest our local authorities with power similar to that exercised by the corresponding British official. Before we can do that we must build up a force of skilled, responsible and able civil servants comparable with the British force. But the plan of the committee calls for the establishment of a board, which unfortunately must probably be temporary in character, which could safely be given power to arrive at decisions and there should be no hesitation in granting them the power. British experience plainly indicates that such power must be delegated to some factor in the administration if the income and profits taxes are to be promptly and fairly assessed.

"In a word, we must arrange for a prompt and certain determination of tax liability. To secure this we must empower some capable, intelligent and trustworthy authority to use their judgment and discretion in arriving at agreements with taxpayers. A board such as you propose would, I believe, be a body which could safely be entrusted with the necessary authority and the plan would undoubtedly meet the present emergency. A complete solution of our general problem rests fundamentally upon our ability to build up a capable, permanent force of civil servants."

Mr. Hurrey, whose opinions are largely based on three years' experience as one of the chief administrators of the unpopular 1917 and 1918 revenue laws, replies to the AMERICAN MINING CONGRESS that it "has arrived quickly and surely at the very heart of the taxation problem and evidently recognizes clearly that one of the greatest problems confronting the incoming administration is some kind of equitable settlement of the vast number of unadjusted income and profits tax cases. It is easy to follow the clear analysis which the committee has made of the situation and the solution proposed is one which will appeal strongly to those who are hoping for a direct and final settlement of all these cases on a broad and comprehensive basis."

Many provisions of the revenue laws are altogether too inflexible to provide a satisfactory basis of according equitable treatment to all of the taxpayers affected, Mr. Hurrey agrees. He calls attention, on the other hand, to the fact that the law has been made intricate and difficult of interpretation by the very attempt of Congress to provide for every possible case which might arise. Under these complicated laws, which, despite all their refinement and qualifications, are nevertheless inflexible and arbitrary when applied to many individual cases, the Commissioner of Internal Revenue has had an unenviable and almost impossible task to perform. With the solemn responsibility of interpreting and applying the law as he finds it to be, the commissioner and his subordinates have been under the necessity of asserting tax liability in many cases quite at variance with clear considerations of equity.

"The proposal of the AMERICAN MINING CONGRESS," continues Mr. Hurrey, "is the establishment of a separate independent board to be charged with the sole function of taking up and settling finally the more difficult of the tax cases which now confront the Bureau of Internal Revenue for settlement. The proposed membership of the board—nine in number—should be sufficient, if men of high standing and ability are selected, to command the confidence of the public. Presumably the board will be guided in its decisions by the provisions of the law, but would be free to exercise more discretion under the law than the Commissioner of Internal Revenue has heretofore exercised.

"I believe that some such arrangement for injecting finality and equity into the administrative decisions of the tax cases is essential if the government is to proceed with rapidity to collect the back taxes which are due, and if the business community is to be relieved of the

A FEDERAL WAR TAX SETTLEMENT BOARD.

"Absolutely necessary. Not pick and shovel methods, but blasting and steam shovel methods, are needed."—Prof. Plehn, University of California.

"Congress should not hesitate to vest such a board with power to arrive at agreements with the taxpayer."—Prof. Haig, Columbia University.

"Arrangement for injecting finality and equity into tax decisions essential for rapid collection of back taxes."—C. B. Hurrey, ex-Deputy Commissioner Internal Revenue.

"Commission to liquidate tax controversies absolute necessity."—C. M. Zander, Chairman Arizona Tax Commission.

"Important proposal. Situation requires the cutting of a knot."—R. N. Miller, ex-Solicitor Internal Revenue.

"If Revenue Bureau gets through the next two or three years without a breakdown, I shall thank God!"—Dr. T. S. Adams, Tax Advisor to Treasury, before House Ways and Means Committee Dec. 14.

incubus of uncertainty which now surrounds the whole question of back taxes.

"I think that Congress may well consider in connection with the committee's recommendations, the question of whether the proposed board should be separate and independent, or should be made an integral part of the Bureau of Internal Revenue, similar to the Advisory Tax Board which was some time ago discontinued. If the latter alternative was adopted, the power of closing cases finally would be vested in the Commissioner of Internal Revenue. This question is one of organization and it might be deemed advisable to place all of the responsibility for tax administration under one head so that the procedure of the board and of the bureau might be effectively co-ordinated."

Ex-Solicitor of Internal Revenue Robert N. Miller recently stated publicly that it was plain to him that "we have now reached a place where the disadvantages of final and quick judgment, and they do exist, are more than overborne by the advantages of getting this thing finished and done. Of course, we all want to do things absolutely right, and of course we realize the necessity of following principle, but we are in a situation here that absolutely requires the cutting of a knot. It is very, very important to consider the AMERICAN MINING CONGRESS proposal. That body has a better right maybe, certainly as good a right, to say something definite and forceful on this subject as any body in the United States. Mining is the most hazardous business in the country, and in spite of the hazards it has managed to pay practically ten per cent of the taxes paid by corporations. So it has a right to speak very definitely as to what ought to be done."

Mr. Miller also called attention to the necessity of more adequate salaries for Revenue Bureau employees, "to hold the good men that it has got and to get more," in order that the tax settlement board's achievements might be accelerated and aided.

The chairman of the Arizona Tax Commission, C. M. Zander, telegraphed his views succinctly but definitely: "Proposed commission to liquidate tax controversies absolute necessity."

The purpose and scope of the proposed settlement board were well described by George E. Holmes before the recent convention of the AMERICAN MINING CONGRESS: "What we need to cope with the extraordinary situation is a board of greater power than can be created under the present law, a board with powers particularly to compromise or arbitrarily fix taxes in cases where it is impossible to ascertain definite values or to determine fine points of law or accounting. Such a board would have an extraordinary task before it, and must necessarily adopt extraordinary methods to handle the situation. It is precisely what the courts will have to do eventually if these cases are appealed to the courts, and such a board, acting in a judicial or semi-judicial capacity, would relieve the courts of a great deal of burden, would most expeditiously settle cases (more quickly because away from the muddle in which we find ourselves at the present time because of war taxation), and could start in on the collection of current revenue and keep the business of the Bureau of Internal Revenue more nearly up to date."

That the seriousness of present conditions has not been exaggerated is shown by the statement of Dr. Thomas S. Adams, Tax Advisor to the Treasury Department, before the House Ways and Means Committee on December 14. "We must use the larger portion of the force and all the brains we can get, and more if we can possibly get hold of them, to get through with the audit of tax returns now in the bureau for the calendar years 1917, 1918 and 1919," declared Dr. Adams. "In other words, if the Bureau of Internal Revenue, with the favor of Almighty God, and all the ability and talent it can possibly procure, gets through the next two or three years under any administration and under any party without a breakdown, I shall thank God!"

HYDRAULIC MINING REPORT BY CHIEF OF ENGINEERS

THE CHIEF OF ENGINEERS of the army in his annual report reviews regulations by that service of hydraulic mining, which operations are largely limited to the territory between Mount Lassan and the Yosemite Valley on the western watershed of the Sierra Nevada Mountains. Upon application by prospective miners, the engineers make investigation and issue permits to operate to those who provide satisfactory debris-restraining basins by the construction of dams. The cost of this work is $18,000 per year. Last year one hundred inspections of hydraulic mines and barriers were made; nine applications for permits for hydraulic mining were received; nine authorizations to construct impounding works were issued and two annulled; seven permits were issued upon completion of impounding works; six permits were suspended and two revoked for failure to comply with rules; one permit was restored upon compliance with requirements by the permittee.

Operations of gold dredging companies under eight permits, and similar operations by numerous other companies for which permits were not required, were supervised. Inspections were made of twenty-five gold dredging plants and sixty-three quartz mine barriers, and five barriers were constructed under plans approved by the Engineers.

The Engineers have received 945 applications for permits for hydraulic mining. Seventeen mines are operating under permits and four others have been authorized to construct impounding works. Hydraulic mining on a very limited scale has been restored without adding any considerable amount of debris to that previously deposited in the drainage system of mining regions. Twenty-six quartz mines have constructed barriers to prevent passage of their tailings to navigable streams. Surveys have been made of portions of the Yuba, Feather, Bear and American rivers containing great deposits of mining debris.

Mine owners are required to bear all expenses incurred in complying with orders of the Engineers. Mine operators repay the cost of restraining dams with 3 per cent of their gross output.

Recommendation is made that investigation be had in detail of the possibilities for co-operative dam sites for the restraint of debris, in order to permit resumption of hydraulic mining to a great extent without injury to navigable streams; that gold dredging be more adequately guarded; and that the placing of tailings in navigable streams by quartz mines be more efficiently regulated.

Use of Electricity In Mines

"MINING LAWS on Use of Electricity in Coal Mines" is the subject of Technical Paper 71, by L. C. Ilsley, electrical engineer of the U. S. Bureau of Mines. Twenty-one states in their coal mining codes make reference to the use of electricity. This report embodies the results of a study of all such laws and references, and is intended to compare the interest taken by the different states.

GOVERNOR OF ALASKA LOOKS FOR EARLY REVIVAL OF PROSPERITY

THOMAS RIGGS, JR., governor of Alaska, in his annual report to the Secretary of the Interior, advocates the enactment into law of the McFadden bill. Collection of a bonus on gold from the manufacturer and payment of a premium to the producer, Governor Riggs points out, would be of material assistance to the gold mining industry.

Early re-establishment of the mining industry of the territory is forecast by the governor, who discusses the situation thus briefly:

"It is true that mining has never before been so handicapped as at present, that operating costs are practically prohibitive in places, and that transportation could hardly be worse, but I see great hope for the speedy re-establishment of the mining industry and many mining men with whom I have talked thoroughly agree with me.

"The gold prospects of the Kuskokwim Valley have attracted the attention of mining men throughout the country and one company already is doing extensive development work. Machinery has been shipped to the Nixon Fork of the Kuskokwim and preparations are being made to thoroughly exploit that district. It is reported to me that already enough high grade ore has been uncovered to more than pay for the heavy initial expenses. In the Kantishna district there is great activity, particularly along the silver lead lodes of great richness, and other new finds are being reported. Some hydraulicking projects, too, are being pushed. In the Fairbanks district some of the lodes show every indication of becoming mines. Chicagof Island prospects, bearing high gold assays, have been bonded for large sums of money, with substantial preliminary payments. There is renewed interest in Admiralty Island and in the mines of Lynn Canal.

"Among the other districts of promise may be mentioned Willow Creek, Broad Pass, Portland Canal for gold and silver, Cape Prince of Wales for tin, and Prince William Sound for copper.

"There are more prospectors in the hills than at any time since the war, and experience has shown us that when prospectors are busy there is always some valuable mineral discovery made. We need, though, more prospectors. Transportation conditions, however, are the greatest handicap to successful mining. Until some cheap form of transportation is available we cannot hope to open up the great low grade mines of lode or placer. Development for the present will be only on those mines showing high values.

"Of material assistance to the gold mining industry would be the passage of the McFadden Bill (H. R. 13201) providing for a bonus on gold to be collected from the manufacturer and to be paid the producer."

Although the mining industry of Alaska as a whole suffered a serious depression in 1920, yet the value of the total mineral output was greater than in 1919, chiefly because of the great increase in the production of copper, largely to be credited to the four large copper mines in the territory. The value of the total mineral production of Alaska was $19,620,913 in 1919 and about $22,070,000 in 1920. The output of the gold placers has decreased, but that of the gold lode mines has been maintained.

Value of Mineral Production in Alaska in 1919 and 1920.

	1919.	1920.
Gold	$9,426,032	$8,000,000
Copper	8,783,063	12,400,000
Silver	705,273	900,000
Platinum and allied metals	73,663	80,000
Tin	73,400	20,000
Lead	72,822	142,000
Coal	343,547	380,000
Petroleum, marble, gypsum, quicksilver, etc.	143,113	148,000
Total	$19,620,913	$22,070,000

Among new legislation and regulations which have already benefitted the territory, the governor cites the following:

Enactment of oil-leasing law and the fixing of minimum royalties.

Enactment of water power leasing law.

Elimination, with the approval of the Secretary of the Interior, of the reserved eighty-rod strip along navigable rivers.

Reimbursement of chrome producers for losses incurred while operating under encouragement from the government during the war.

Increased appropriations for roads and trails.

Authorization of increased appropriation for construction of the government railroad.

Slightly increased telegraph service.

The most important recommendations made by the governor are the following:

Enactment of the transportation-in-Alaska bill.

Enactment of the McFadden Bill.

Amendment of coal leasing law, exempting lessees from the payment of rentals and royals for the first five years.

Consolidation of the various branches of the General Land Office in Alaska and the creation of the office of Secretary of Alaska separate from that of the surveyor general.

Enlarged activities of the Bureau of Mines.

Restoration of prewar appropriation to the United States Geological Survey for work in Alaska.

Restoration to the public domain of useless withdrawals and reserves.

Alfred H. Brooks, of the United States Geological Survey, is preparing a report on mineral resources and production in Alaska for 1920, and it is permissible to publish in advance some of his figures and conclusions.

GENERAL CONDITIONS.—Alaska mining began in 1880 and had produced, up to the close of 1920, minerals to the value of $460,240,000, more than half of which is credited to the last decade. About seventy-five per cent of production for the twenty years came from bonanzas. It is the opinion of Mr. Brooks that such mining will continue, as the known bonanza deposits of the territory have not become exhausted and there are good prospects of finding others. Minerals won from low-grade deposits during the twenty years have a total estimated value of $105,000,000. Most of this value represents gold.

PLACER MINING.—During forty-one years Alaska has produced gold to the value of $320,000,000, of which $221,642,000 came from placer mines. The value of the placer output in 1920 was $3,630,000, a decrease of $1,340,000 from 1919. "The outlook under present economic conditions for a revival of the industry as a whole is not hopeful," Mr. Brooks will say in his report.

GOLD LODE MINING.—According to the estimate of Mr. Brooks, fifteen gold lode mines and five prospects were operated in Alaska in 1920. They produced about 3,270,000 tons of ore, from which $4,360,000 worth of gold and 106,000 ounces of silver were recovered. The 1919 output was 3,262,573 tons of ore, from which $4,392,237 worth of gold and 108,691 ounces of silver were recovered.

COPPER.—Eight copper mines, the total which operated in 1920, produced approximately 330,000 tons of ore, from which 71,000,000 pounds of copper, 710,000 ounces of silver and $12,000 worth of gold were recovered. The total copper production of Alaska during twenty years was thus brought up to 616,000,000 pounds.

MISCELLANEOUS METALS.—Alaska mines in 1919 produced 488,034 ounces of silver; in 1920, 887,000 ounces. Lead production, which amounted to 564 tons in 1919, totalled about 880 tons in 1920. Most of the increase of silver was won from copper ores, but the increase both in silver and lead was due in part to the mining of galena ores. Approximately thirty-one tons of steam tin concentrates were mined in 1920, as against about eighty-six tons in 1919. Some quicksilver was also produced in 1920, and likewise some cinnabar and some marble. Gypsum, sulphur and garnet sand also were produced, as well as coal and oil.

ALASKA ROAD PROGRAM URGED AS MINING STIMULUS

ALASKA HIGHWAYS will be constructed upon a ten-year program if the recommendation made to Congress by the Chief of Engineers of the U. S. army is adopted. The Chief of Engineers asks for an appropriation of $955,000. Increased cost of labor and materials have made gold mining in the territory unprofitable except upon the very richest claims, he says, while still higher wages have drawn prospectors and settlers to the United States, causing a serious depletion in the ranks of the sturdy manhood upon which the prosperity of Alaska rests. The Chief of Engineers stated his belief that this tide had turned, however, and that in a few years many ex-service men would go to Alaska and many who have left and are still leaving would return.

The Chief of Engineers reports the following roads under development:

Talkeetna, Takotna, Ophir and Ruby Road, 280 miles, in the Susitna and Kuskokwim District, which reaches from Ruby on the Yukon through the most promising mining district of the Kuskokwim, through Mount McKinley Park and Kalketna, on the government railroad. Sixty miles of road are under construction and the road will reach the most promising mineralized region of the Upper Yetna valley.

Davidson's Landing, Kugarok and Candler Road, 135 miles, Nome district, from tidewater through the Kugarok mining district to Kotzebue Sound at Candle.

Roosevelt Glacier and Riley Creek Road, seventy-five miles, Yukon district, connecting the important Kantishna mining district with the head of navigation on the Kantishna River and with the railroad at Riley's Creek.

Gulkana and Chistochena Road, forty miles, Copper River district, which will make accessible the promising Slate Creek mining district.

The Chief of Engineers lists important possible road projects as follows:

Alaska Peninsular Wide Bay oil fields, twenty-five miles. Reaches from tidewater at Wide Bay to oil fields now being prospected near Cold Bay.

Susitna Valley, Talkeetna Valley, and Iron Creek, forty-five miles, which will connect an important mining district in the Susitna Valley with the railroad.

Copper River Valley, Abercrombie (Copper River Railroad), Katalla, forty-five miles, making accessible the Katalla oil fields to the port of Cordova.

Katalla-Cape Yakatagam, eighty miles, reaching a new oil field now being prospected and otherwise inaccessible.

Yukon Valley, Forty Mile to Tanana Crossing, sixty miles, passing through an important mining district.

Susitna Valley, government railroad—Valdez Creek, fifty miles, making accessible to the railroad the important Valdez Creek mining district.

Strelna to Kuskulana River, sixteen miles, to important existing roads built by mining operators, making accessible important mining district in the upper Kuskulana Valley.

Chatanoka-Livengood, fifty-six miles, making accessible important mineral developments around Livengood

Beaver-Caro, seventy-five miles, providing traffic between Chandalar mining district and the Yukon.

Eagle-Seventy Mile, forty miles, connecting the Seventy Mile mining district with Eagle.

Nome-Kugarok, sixty miles, connecting the Nome district with the Kugarok mining district and with the Davidson's Landing-Candle road project.

The $955,000 appropriation requested for the coming year will complete the opening up of the Valdez-Fairbanks road and the Haines-Pleasant Camp road, finance the continuance of work on the Takotna-Ophir, Talkeetna-Cache Creek, Kantishna roads, and make possible the beginning of work on Kugarok-Candle, Eagle-Forty-Mile, Circle Chatnika, and Kulnama-Slate Creek roads.

During the year ended June 30, 1919, shipments of domestic gold and silver from the United States to Alaska amounted to $98,523, and from Alaska to the United States to $9,224,759. In addition, $83,360 worth of foreign gold and silver was shipped from Alaska to the United States.

Alaska Work To Be Co-ordinated

ALASKAN ACTIVITIES of the federal government will be co-ordinated by a committee recently appointed by authorization of President Wilson. Members of the committee, as announced by Secretary of the Interior Payne, are Major Clarence O. Sherrill, of the War Department; James B. Corridon, Postoffice Department; George A. Parks, Interior Department; E. A. Sherman, Department of Agriculture; Dr. Hugh M. Smith, Department of Commerce; H. Y. Saint, U. S. Shipping Board; O. C. Merrill, Federal Power Commission, and Governor Riggs, of Alaska.

In his letter authorizing appointment of the committee President Wilson said:

"In view of the work of the different departments in dealing with Alaska, I approve the formation of an inter-departmental committee. The function of the committee is to co-ordinate and bring together facts and suggestions touching matters affecting Alaska and make recommendations for definite action to the department charged with the particular function, to the end that duplication may be avoided and efficiency secured.

"While the work of the committee is advisory, it is believed that by bringing together all available information and providing for an exchange of views by representatives of the different departments, much of the difficulty now experienced in dealing with Alaskan affairs will be obviated and speedy and intelligent co-operative action secured."

WATER ROUTES NECESSARY FOR ALASKAN PROSPERITY

WATERWAY DEVELOPMENT is the key to Alaskan transportation problems and, therefore, to the prosperity of the territory, according to the Coast and Geodetic Survey, which in its annual report seeks an increased appropriation. Many examples of the need of preliminary surveying are cited.

Marble deposits in Davidson's Inlet are of high quality, the report sets out, and a company was organized to work them and ship to Seattle, but as the approaches to the quarry had not been surveyed, the steamship companies declined to send vessels there. Later a survey was made, a channel was developed, and shipments to Seattle began. The business has grown.

Another example cited was the situation at Khaz Bay on the west coast of Chicagof Island. An outcropping of gold bearing quartz was discovered and development work showed a rich claim, revealing nuggets and wires of free gold. An assay of choice samples revealed a gold content as high as $2,200 per ton of ore. But because the mine was situated at the head of a small unsurveyed bay known to be dangerous, steamship companies refused to send vessels either to take in machinery or to bring out ore, except at prohibitive cost.

Pointing out that communication between Alaskan ports is by water, the Survey takes the ground that capital spent in developing gold mines and opening coal fields will be wasted if vessels cannot ply safely between ports. The interests of invested capital must be safeguarded by surveys.

The Survey intends to establish at Kantishna a permanent station for supplies of fuel supplies at a cost of $22,500. It is unfortunate, the Survey holds, that vessels have to depend upon foreign coal and are often delayed because Australian and Canadian fuel is not always available for Americans. The Survey proposes to construct a wharf which can be used by large vessels for storing coal and supplies connected with its fuel operations.

Extensive mineral resources remain undeveloped, the report sets out, because of lack of economical transportation facilities along the coast, this condition prevailing from the waters of Prince William Sound westward to Unimak Pass. Here, and at the head of Cook Inlet, where there is considerable mining, the Survey would expend some of the funds of the increased appropriation.

MINE STATION HEADS TO MEET AT BERKELEY

WESTERN EXPERIMENT station superintendents will meet at Berkeley, Cal., January 24-26, 1921. The Southwest, Intermountain, Rare and Precious Metals, Northwest and Pacific stations of the U. S. Bureau of Mines are included. Following is the tentative program, announced by Dorsey A. Lyon, supervisor of mine experiment stations:

January 24.

First Session (10 a.m. to 12:30 p.m.). Each superintendent will discuss the work of his station as regards: (a) The work which his station has accomplished or completed which is of direct benefit to the mining industry; (b) The work in hand; and (c) The work contemplated.

Second Session (1:30 p.m. to 5 p.m.). Discussions of the following subjects:

1. (a) Value to the stations of the technical literature reference cards prepared by Miss Stimson at Pittsburgh; written discussion by T. T. Read; oral discussion led by Thos. Varley; (b) The semi-monthly library bulletin of the Pittsburgh Experiment Station; discussion led by Thos. Varley.

2. Discussions contributed by H. E. Meyer: (a) How the field stations and offices of the Bureau can co-operate to the best advantage in the handling of the general administration of the Bureau's work; (b) How the chief clerk's office can co-operate to the best advantage in the handling of the general administration of the field office and field station work.

3. Service rendered to the experiment stations by the office of the supervisor of stations; written discussion by J. D. Secrest.

4. Distribution of Bureau publications at field stations and offices; written discussion by T. T. Read.

5. Proposed designation of special disbursing agents at certain field stations of the Bureau.

January 25.

Third Session (8:30 a.m. to 12:30 p.m.). The following conferences will be held: (a) Conference between the deans of the mining schools represented, the supervisor of stations and the assistant director; (b) Conference between the deans of the mining schools represented, station superintendents and other Bureau officials. The following subject will be discussed: "The ideal co-operative agreement between the Bureau and its co-operating agencies." This discussion led by E. A. Holbrook.

Fourth Session (1:30 p.m. to 5 p.m.). Conference between the deans of the mining schools represented, station superintendents and other Bureau officials. Discussion of the following subjects:

(1) What the government service offers to engineers, geologists and chemists; discussion led by C. E. van Barneveld;

(2) How the Bureau may assist the schools in stimulating research and investigational work in their mining and metallurgical departments; discussion led by Deans Joseph F. Merrill and F. C. Lincoln;

(3) How the Bureau may assist the schools in maintaining a closer contact with the mining and metallurgical industry; discussion led by Deans Milnor Roberts and G. M. Butler;

(4) How the Bureau may assist the industry, as likewise the schools, in solving the mining and metallurgical problems which are at the present time confronting the mining and metallurgical industry; discussion led by Dean F. H. Probert.

January 26.

Fifth Session (8:30 a.m. to 12:30 p.m.). Discussion of the following subjects: (1) The Bureau's program on flotation; discussion led by Dr. S. C. Lind. (2) Service that can be rendered to the other stations by a chemical research laboratory at the Pacific Station; discussion led by Dr. L. H. Duschak. (3) Service that can be rendered to the other stations by the electrochemical-metallurgical section of the Northwest Station; discussion led by O. C. Ralston.

Sixth Session (1:30 p.m. to 5 p.m). The following conferences will be held: (a) On the production of sponge iron; (b) Miscellaneous subjects.

HOW SECRETARY DANIELS SOLVES THE NAVY'S OIL AND COAL PROBLEMS

THE SUGGESTION that many industrial plants may be compelled to abandon their oil-burning equipment and return to the use of coal, together with a full discussion of the oil situation as respecting the navy's needs; the decision to develop the Chicaloon, Alaska, coal field, and the utilization of scrap metals during the year operate to make the annual report of Secretary of the Navy Josephus Daniels of more than passing interest to the mining industry.

The Secretary in his report has the following to say about the navy's oil needs and his plan for meeting them:

"Assuring an adequate supply of fuel oil is so essential to the future of the navy that it is a subject which must engage the most serious attention. The supply of crude oil in the earth within the limits of the United States, experts point out, is rapidly becoming exhausted, while consumption is increasing enormously. In the early part of 1913, shortly after I became Secretary of the Navy, in response to an inquiry by the Navy Department as to whether the navy would be justified in constructing oil-burning ships, the Interior Department gave assurance that its experts felt that the oil supply would be adequate for many years to come.

"The United States Shipping Board is building practically all oil-burning vessels, and American requirements for this purpose have grown from a comparatively small quantity three years ago to a possible consumption of 50,000,000 barrels per annum in the near future. Industries where fuel oil is an essential have increased largely, while many industries where it is not essential have been converted to oil burning. It may be necessary for a way to be found to conserve oil for use afloat by reconverting industrial plants so that they may burn coal instead of oil, leaving the oil for naval and merchant ships which must have oil for long voyages and for cheaper operation.

"The military characteristics of a modern man-of-war absolutely demand the use of fuel oil. The amount of oil required for the navy is constantly increasing, and will continue to increase as coal-burning vessels are replaced by modern dreadnaughts and battle cruisers; nor must it be lost sight of that a battle cruiser has more than six times the horse power of the old battleship which she displaces.

Oil Reserves Essential For Future.

"For the most efficient operation of the navy there are required: First, a commercial supply of oil for use in peace times where oil should be provided at a fairly reasonable cost; second, a reserve storage sufficient to carry the navy through the critical period when the reserves are being developed to replace and augment the commercial supply which may be partially cut off by war; third, underground reserves which can be quickly developed for use in war time or at such other periods as may be necessary to supplement the commercial supply.

"Cu rent supplies of fuel oil are now being obtained under contract from various commercial suppliers. The present reserve storage is seriously depleted, but with return to normal conditions it is hoped that the apparent world shortage of fuel will be relieved and our reserve storage can be filled to capacity and materially increased. Present power to commandeer oil for naval needs should be continued."

The navy has three petroleum and two oil shale reserves in California and Wyoming. Estimates of the Geological Survey place the recoverable contents in Reserve No. 1 at 100,000,000 barrels, while other estimates vary from 25,000,000 to 125,000,000 barrels. Recent developments in this field by the Standard Oil Company tend to confirm the view that the reserve has great possibilities. It is estimated that Reserve No. 2, including Southern Pacific lands, contains 335,000,000 barrels of oil. Reserve No. 3, near Casper, Wyoming, is estimated to contain 30,000,000 barrels of high-grade oil. While the entire reserve is covered by claims, none are considered valid by the navy or the Department of Justice. Although under the Leasing Law producing wells within naval reserves can be leased, the Secretary says that, in view of the fact that there are no producing wells in either Reserves Nos. 1 or 3, the navy's interest therein can be considered well protected. Owing to its physical contour and the scattered location of producing wells, Secretary Daniels questions whether Reserve No. 2 can be maintained without great loss of oil due to drainage by the present wells and by wells drilled outside of the reserve. The policy to pursue with respect to this reserve, he holds, must be determined after the Leasing Law has been in effect for some time and after the drilling policy of oil companies operating outside of the reserve is known.

Oil Shale Reserve No. 1, containing 45,440 acres, and No. 2, containing 86,584 acres, are located in Colorado and Utah and are estimated to contain one billion barrels of oil. The Secretary says that obtaining oil from shale is a mining and manufacturing question and that as soon as petroleum resources are depleted so as to make the process commercially profitable the shale industry must develop into a business of magnitude and importance.

Commandeering for Fuel Recommended.

Secretary Daniels recommends that permanent authority be given the navy to commandeer fuel supplies, including coal, fuel oil and gasoline. He reports that adequate fuel stocks to meet the needs of the fleet and guard against interruptions in delivery were maintained during the year, but that the prices demanded, especially for coal, were so exorbitant that it was necessary to resort to commandeering orders to secure coal at reasonable rates. Repeated efforts were made to obtain supplies of coal and oil through competitive bidding, but the quantities offered were insufficient and the prices were excessive. By negotiation the navy's petroleum needs were finally covered by satisfactory contracts, but for coal the only alternative was to continue commandeering.

Fuel Oil Storage.

Five large depots for fuel oil are now ready for service, providing storage facilities as follows: San Diego, 4,200,000 gallons; Pearl Harbor, 15,000,000 gallons; Puget Sound, 12,000,000 gallons; Yorktown, 30,000,000 gallons; and Guantanamo, 15,000,000 gallons.

Navy Development of Alaska Coal.

The most important administrative problem concerning the Pacific Fleet is the maintenance of an adequate fuel supply, the Secretary says. Wells of the Southwest are regarded sufficient for oil-burning vessels, and the Secretary, basing his opinion on that of experts, holds that the Chicaloon mines, in Alaska, offer sufficient promise to warrant energetic continuation of exploration work. While it is impossible to make an accurate estimate of the amount of coal in these mines, it was roughly estimated that 250,000 tons of minable coal were exposed. The Chicaloon mine contains 480 acres.

A shaft has been sunk 571 feet deep to a 16-foot seam of coal. Up to July 1 of this year 9,793 tons of coal had been mined and approximately 150,000 to 200,000 tons were in sight. When washed, this coal meets the navy standard. The coal will be washed at the plant operated by the Alaskan Railroad, thus avoiding the necessity of constructing a separate washing plant. The plant will have a capacity of 40 tons per hour and will handle coal mined by both the Interior and the Navy Departments. Facilities for shipping and storing can be located at Seward and Anchorage.

Metal Airplane Construction.

The Secretary says there are advantages in metal construction of airplanes. For seaplanes metal construction is more desirable than for land planes.

High-strength alloys of aluminum, known as duralmin, which originated in Germany, but is now being produced in this country, and light strip alloy steel of high strength and extreme ductility, are considered by the Secretary as materials which give promise in metal plane construction. "We are not yet prepared to build planes of metal equally light and strong as those built of wood," says the Secretary, "but we shall soon be building planes in an experimental way which will compare favorably with those of wood, and with the rapid development of the art we may predict that within a reasonable time metal construction will supplant wood for at least the majority of naval planes."

Millions Saved in Scrap Metals.

Utilization of scrap metal has resulted in a substantial saving, the Secretary said. Previous to 1915 all of the navy's scrap non-ferrous metal was sold for whatever it would bring, but a smelting plant was established at Portsmouth, New Hampshire, Navy Yard, where all non-ferrous scrap has been sent to be made into ingot metal for re-use in the foundries. About 23,000,000 pounds has been furnished from this plant at an average cost of 10.6 cents per pound as compared with a cost of 22 cents for the original metal. The Secretary estimates the saving at $2,630,000. The Portsmouth plant has also aided in supplying foundries with alloyed ingot metals which were difficult to purchase in the open market.

There has also been installed at Portsmouth a washing plant for the recovery of metal from by-products, such as ashes, sweeps and skimmings, which material was formerly discarded. Navy yard foundries are allowed a credit of 1½ cents a pound for this material. The washing plant has handled about 2,500,000 pounds of skimmings, recovering one million pounds of metal valued at 10 cents per pound. The building, material and equipment cost about $50,000 and a net gain of about $50,000 has resulted in eighteen months. The smelting plant has for three years supplied the navy with 120,000 fishing and sounding leads, weighing from 2 ounces to 80 pounds, all produced from old lead scrap.

The Secretary says that the navy has been buying supplies abroad at reduced prices, and refers to the purchase through Singapore of 672,000 pounds of tin at a saving of $16,800.

NO CHANCE FOR FUEL FAMINE TO HIT U. S. SEA FIGHTERS

NO FUEL FAMINE, had one really occurred during the last year, could have affected the United States navy, according to the annual report of the Paymaster General of the sea-fighting forces, which says that stocks of coal, oil and gasoline were maintained at all times in quantities sufficient to meet any emergency.

The navy's coaling stations at Portsmouth, Boston, Melville, Charleston, Key West, Guantanamo, Cuba, Panama Canal, San Diego, Tiburon, Puget Sound, Pearl Harbor, Cavite and Tutuila are supplied by water transportation from Hampton Roads. Other fueling plants in the United States, principally Constable Hook, are supplied by rail.

Leases for fuel oil storage plants at Sewall's Point, Hampton Roads, and Cristobal, Canal Zone, were renewed during the year. At the Panama Canal, oil suitable for naval vessels is not carried in stock either commercially or by the Panama Railroad and efforts are being made to obtain from excess stocks of the War Department gasoline tanks of from 2,000 to 50,000 gallons capacity for placement at points along the Atlantic where the maintenance of bulk storage is necessary.

The Paymaster General states that coaling plants at some of the more important ports, particularly Boston and New York, are not located on government-owned land. Because of tremendous demand for coal and oil, commercial storage is not adequate and the government has large investments of capital in coaling plants on rented ground at these points. Although the size of the fleet is constantly increasing, there is no available space for fuel storage in the Boston or New York navy yards. The Paymaster General says that sound business and naval policies require that the control of these plants be secured by the government by purchase of the land. Such leased land at Constable Hook was purchased by a firm which immediately notified the navy to vacate.

Coal piles maintained as war measures at Rio de Janiero, Bahia, Montevideo, Halifax. St. Thomas, the Azores and Bermudas have been discontinued.

Efforts have been made to obtain required supplies of coal and oil through competitive bidding, but the quantities offered have been inadequate and the prices asked have appeared excessive. By negotiation a supply of petroleum products has been covered by satisfactory contracts, but in obtaining coal no other course was open than to continue naval orders in effect as provided by law and to require delivery in accordance therewith. Arrangements have been made in one case to provide for delivery by contract of 3,000,000 barrels of bunker oil "A" under conditions which require the contractor to refine the oil under government supervision and inspection, which, the report states, should be a material factor in the navy's oil supply in the future.

The report gives the consumption of fuel and oil by the navy during the year as follows:

1,545,000 tons steaming coal at average cost of $5.90 per ton, $9,115,550; 45,000 tons anthracite coal at average cost of $8.50 per ton, $328,500; 6,000,000 barrels fuel oil at average cost of $1.58 per barrel, $9,480,000; 35,000 barrels gas oil at average cost of $2.85 per barrel, $99,750; 356,000 gallons distillate at average cost of 10½ cents per gallon, $37,380; 6,000,000 gallons motor gasoline at average cost of 21 cents per gallon, $1,260,000; 750,000 gallons aviation gasoline at average cost of 28 cents per gallon, $210,000; total, $20,585,130.

Shipments of coal and oil by water were made in naval colliers and tankers, but as the number of these vessels was insufficient, vessels were chartered from the Shipping Board and private owners.

Pacific coast coaling plants must be supplied from Hampton Roads, Va., but rail shipments of coal to such distant points are expensive and are resorted to only when absolutely necessary. During the year eighty-one vessels other than government owned were chartered, and they handled 352,120 tons of coal at a cost of $3,015,640. The boats were chartered without special difficulty, but the Paymaster General notes an acute shortage of tanks and says the procurement of a sufficient number of vessels of this class to meet all requirements is of vital importance.

It is noted that the lack of railroad equipment has been seriously felt in navy shipments, particularly the lack of open-top cars suitable for coal transportation. The hope is expressed that by freight increases recently granted by the I. C. C. this condition will be remedied. Forty-eight tank cars which were purchased during the war for the transportation of liquids entering into the manufacture of explosives, have since been assigned to navy yard stations for storage purposes and use in making emergency shipments of fuel oil.

COAL AND OIL DEALINGS OF BUREAU OF ENGINEERING

THE NAVY BUREAU of Engineering reports the completion during the last year of eight fuel oil barges and one fuel ship. Two fuel ships are under construction.

The new foundry at the Norfolk navy yard is practically completed and in operation with a daily capacity of ten tons of brass and steel and fifty tons of iron.

At the Mare Island and Puget Sound navy yards, $300,000 worth of tools reverting to the government from the plant extensions at the Risdon Iron Works of the Bethlehem Shipbuilding Corporation are being installed in the machinery division shops.

Endeavor has been made to broaden the field of competition on lubricating oils, refractory material, etc., in which co-operation is maintained with a fuel oil testing plant at Philadelphia. Through information obtained from these sources, manufacturers are advised of the bureau's requirements. A pamphlet on "Information for Oil Refiners" has been issued, giving clear and definite information as to what is expected of a lubricant for use in the naval service. It opens a field to all competitors of good commercial standing and safeguards the government's interest by excluding lubricants whose use might be injurious to machinery.

The bureau reports that during the year thirty-six new brands of lubricating oil and products of five different firms have been added to the acceptable list. The quality of fire brick, fire cement and other refractories has been maintained and improved owing to facilities afforded by the fuel oil testing plant.

The bureau has also designated standard stock material to be carried for assignment to vessels, which includes, among other things, fuel oil burning equipment, such as registers, atomizers, plugs and tips.

The bureau reports that the existing navy acceptable list and the supplementary list of mines were continued in use during the year with such revision as was desirable to maintain an adequate supply of coal for the navy. A navy commission inspected the Matanuska, Alaska, coal fields and upon its report the department decided to continue investigations there. Commander O. C. Dowling is the senior member of the Naval Coal Commission, which is now engaged in making a general investigation of the facilities of this field for supplying coal to the navy.

Navy specifications for standard fuel oil were continued during the year, but to permit the use of heavier gravity in California oils the specifications for the west coast were amended so as to make acceptable oils having a viscosity not greater than 100 Engler at 700 degrees Fahrenheit. Kerosene specifications were continued, but gasoline specifications were amended to conform to those adopted by the Committee on Standardization of Petroleum Specifications. The 45 per cent distillation point was changed to 50 per cent with a corresponding change in the temperature, increasing the end point from 428 to 437 degrees F., permitting a considerable increase in the supply of standard gasoline with but a slight sacrifice of efficiency.

The bureau reports that while the land-leasing law of February 25, 1920, was not entirely satisfactory to the navy, it is believed the navy's interests are fairly well safeguarded.

FUEL SAVING REPORTED BY BUREAU OF YARDS AND DOCKS

THE BUREAU OF YARDS AND DOCKS reports the completion at the Philadelphia Navy Yard of a new central power plant and improved steam distributing system. This method of heat supply is said to have resulted in considerable saving in fuel.

Construction work on fuel oil storage plants at Guantanamo, Cuba, Melville, R. I., Puget Sound, Wash., San Diego, Cal., and Yorktown, Va., were completed or nearing completion. Two fifty-five-thousand-barrel tanks purchased for use in France but not sent over were sent to Cavite, Philippine Islands, very largely increasing the fuel oil storage capacity at that point. Preliminary studies for the storage of fuel oil at Hampton Roads were made but final designs were not prepared.

The bureau reports that the helium production plant at Fort Worth, Texas, is about ready for operation. Buildings and natural gas pipe lines from Petrolia to Fort Worth were completed and machinery and equipment is being installed.

Navy Surgeon General Also Has Fuel Troubles

THE SURGEON GENERAL of the navy in his annual report stated that labor conditions had interfered greatly with the keeping of a supply of coal at the Annapolis hospital. The effort to keep a month's supply on hand was altogether unsuccessful and at times there was only enough fuel to last one day, making it necessary to draw upon the stocks of the naval academy. He recommends that an out-door bin holding five hundred tons be built, as it appears to be impracticable to increase the existing bunker capacity sufficiently.

At the Pensacola hospital liveoak logs left by a building contractor were used during a coal shortage and a fifty per cent saving in fuel costs resulted.

The Surgeon General recommends a new ventilating system for the brass foundry at the New York navy yard, where fifty per cent of employes are reported as having had "brass chills," or "spelter shakes," while one-third of them showed marked signs of bronchial irritation.

LARGER APPROPRIATIONS SOUGHT BY GOVERNMENT DEPARTMENTS

Following are some of the more detailed appropriations requested of Congress for the support of the government for the year beginning July 1 next.

Salaries and expenses of collectors of internal revenue, $4,288,000; no change from the current appropriation. Expenses of collecting revenue, $33,000,000; increase of twelve million dollars.

MINTS AND ASSAY OFFICES.

Salaries, $25,200, as against $23,680 last year; freight on bullion and coin, $15,000, no change; examination of mints and contingent expenses, $7,000; increase $600.

Carson, Nevada, mint: Salaries, $5,200, increase of $1,000, made up of $600 for the assayer and $200 each for the assistant assayer and clerk; wages of workmen, $4,400, increase of $2,400; contingent expenses, $1,800, increase of $300.

Denver mint: Salaries, $46,900, increase of $900; one clerk at $1,200 omitted; increase of $500 asked for superintendent of coin department, $500 for chief clerk, $200 for bookkeeper, $500 for superintendent, $200 each for assistant cashier and private secretary; wages of workmen, $110,000, no change; contingent expenses, $90,000, no change.

New Orleans mint: Salaries, $5,900, increase $400, or $200 each for the assistant assayer and chief clerk; wages of workmen, $6,250, no change; contingent expenses, $2,650, increase $650.

Philadelphia mint: Salaries, $73,200, as against $68,600 last year; increases of $500 for superintendent, superintendent of coin department and chief clerk and $200 increase for assistant bookkeeper and curator, one new clerk at $2,000, three clerks at $1,800, an increase of two and one in place of one at $1,700; wages of workmen, $350,000—current year appropriations, $440,000; contingent expenses, $140,000—current year appropriations, $177,000.

San Francisco mint: Salaries, $55,600, as against $48,400 this year; increases, $500 for superintendent, superintendent of coin department and chief clerk, $200 for bookkeeper, $300 for assistant assayer and $200 for assistant cashier, four new clerks at $1,400, $1,600, $1,800 and $2,000, respectively; wages of workmen, $200,000, no change; contingent expenses, $75,000, no change.

Boise, Idaho, assay office: Salaries, $5,400, increase $1,200, made up of $600 for the assayer, $400 for the chief clerk and $200 for the assistant assayer; wages of workmen, $2,000, no change; contingent expenses, $1,300, no change.

Deadwood, S. D., assay office: Salaries, $5,000, increase of $1,000, made up of $600 for the assayer and $200 each for the assistant assayer and chief clerk; wages of workmen, $3,000, increase of $1,000; contingent expenses, $1,200, no change.

Helena, Mont., assay office: Salaries, $5,400, increase of $1,000, made up of $600 for the assayer and $200 each for the assistant assayer and chief clerk; wages of workmen, $3,000, increase of $500; contingent expenses, $1,600, no change.

New York assay office: Salaries, $60,250, as against $53,400 this year; increases of $500 each for the assistant assayer and chief clerk, $250 for the assayer, $250 for the deposit weigh clerk, $350 for the assayer's assistant and $150 for the bookkeeper; eight new clerks; wages of workmen, $145,200, as against $170,000 this year; contingent expenses, $115,500, as against $150,000 this year.

Salt Lake City assay office: Salaries, $2,400, as against $1,800 this year, made up of an increase of $500 for the assayer; wages of workmen, $1,500, no change; contingent expenses, $600, no change.

Seattle assay office: Salaries, $12,550, as against $11,450 last year, increase of $400 for the assistant assayer and chief clerk and $100 each for three clerks; wages of workmen, $17,200, as against $15,000 this year; contingent expenses, $6,000, increase of $300.

Total for the mint service, $1,603,200, as against $1,754,180 this year.

GEOLOGICAL SURVEY.

Requested appropriations for the United States Geological Survey total $2,469,140, as against $1,730,700 this year. It is recommended that the salary of the director be increased from $6,000 to $7,500 and that an assistant director at $5,000 be authorized. An increase of $1,000 in salary for the chief clerk is asked, also the appointment of three new scientific geologists at $7,500, $6,000 and $5,000, respectively, and also that two new engineers be authorized at $6,500 and $5,500 each. Two new division chiefs at $3,000 each and an editor at $3,120 are also requested. For general expenses the Survey asks $500,000, an increase of $150,000 over this year; for mineral resource investigations in Alaska, $190,000, an increase of $115,000; for reports of mineral resources of the United States, $200,000, an increase of $75,000; chemical investigations on potash salts, $60,000, increase $20,000; topographic surveys, $600,000, increase $270,000; gauging streams, $300,000, increase $120,000; general expenses on utilization of water power, $25,000, as against $125,000 this year; examination and classification of lands, $300,000, no change.

MISCELLANEOUS.

An increase of $1,500 in the salary of the director of the Bureau of Mines is also requested, making the salary $7,500.

Increased clerical assistance is asked for the offices of the surveyor-generals of the various states, the appropriations requested for which are:

Alaska, $20,890, increase $2,070; Arizona, $25,000, increase $3,000; California, $20,190, increase $3,440; Colorado, $26,190, increase $3,790; Idaho, $19,090, increase $5,740; Montana, $23,560, increase $2,980; Nevada, $17,940, increase $2,380; New Mexico, $27,100, increase $4,300; Oregon, $15,360, increase $2,250; South Dakota, $5,800, increase $500; Utah, $20,725, increase $2,980; Washington, $17,590, increase $2,580; Wyoming, $16,880, increase $2,840.

An increase in salary of $500 is requested for the governor of Alaska, making his salary $7,500.

An increase of $1,500 in salary for the director of the Bureau of Standards, making his salary $7,500, is also requested. Total appropriations for the Bureau of Standards are estimated at $2,179,440, as compared with $1,217,360 this year.

It is requested that the Interior Department be allowed to draw $55,000 from Indian funds to pay expenses in connection with oil and gas production on the Osage, Okla., reservation.

Salaries of registers and receivers of land offices, $475,000, increase of $25,000; contingent expenses, land offices, $425,000, increase $50,000; protecting public lands, $650,000, increase $500,000; surveying public lands, $700,000, no change.

Recoinage of gold coins, $5,000, no change; recoinage of minor coins, $10,000, no change.

Aftermath of the Denver Convention

At the exhibition of the American Mining Congress a device that was of great value in the war is introduced for practical use in the mines of America. This is the geophone, the delicate mechanism of which reported to those in the American trenches all that was going on in the German excavations many yards away. It was like using the solid rocks for a telephone. A man buried a hundred fathoms deep in a mine could be located and possibly communicated with, or at least his operations understood. This would be fine for anyone wishing to get in touch with Governor Cox.—*Los Angeles Times.*

The letter written by President-elect Harding to the American Mining Congress, in session at Denver last week, is reassuring. It goes to prove that the coming administration in outlining its policies intends to take counsel with men who are experts in those lines which may come up for discussion.—*The Black Diamond.*

Twenty-three years of service in behalf of the mining industry. — *Phoenix Mining Journal.*

The Twenty-third convention of the American Mining Congress was the most successful ever held in its history.—*Oatman (Ariz.) Mining News.*

Denver has had the pleasure of entertaining the greatest body of mining men that has ever assembled within her gates. Every branch of the industry was in attendance at the interesting and profitable session of the American Mining Congress and serious consideration and recommendations were given to the welfare of the industry. The big men of the mining business were present and Denver was at her best with hospitality and gala decorations to make the delegates feel at home. Members of the Congress were present from thirty-two states of the Union, from Alaska, Canada, the Philippine Islands and other foreign lands. It was a business session from start to finish—the business in hand being to make the mining industry more prosperous.

Investors will profit as a result of the greater prosperity. The Congress is continuously at work to help the producers of all metals, and Congress at Washington and the nation will listen to and act upon the recommendations of the splendid organization that met in Denver last week.—*(Denver) Daily Mining and Financial Record.*

The message sent by President-elect Harding to the American Mining Congress, and which was published in the *Telegram's* report of the proceedings of the great convention of the mining interests of the country, doubtless eventually will be classed as a historic document in the history of the mining industry of America.

So far as known, the message is the first that has been sent by any President or President-elect to a gathering of mining men of the country, and therefore it is a precedent in the recognition of the mining industry as one of the great industries of the country.—*Ira C. Tichenor in Salt Lake City Telegram.*

Mining Congress Membership A Good Investment

George Wolfe, of Beckley, W. Va., secretary of the Winding Gulf Operators' Association, after attending the Denver convention, wrote the following to the secretary of the American Mining Congress:

"I believe I learned more in the five days that I was in attendance at this convention than in any other five days of my life, and I certainly know that I enjoyed myself as much or more than any other similar period of time. It takes three days and three nights to go from Beckley to Denver, but the trip was well worth the time and trouble.

"I have spoken enthusiastically to our people with reference to the size and power of your Association, and have advocated that no better investment could be made than for each company to have one of their executives become a member, even if they only attended your annual gatherings."

Accompanying the letter was a copy of a bulletin which Secretary Wolfe had sent to members of the Winding Gulf Operators' Association, summarizing the activities of the convention and closing with the statement that "It would seem as if it would be a splendid investment for any coal company to have one of their executives become a member of the American Mining Congress."

According to Jesse F. McDonald, manager of the Down Town Mines Company, who recently returned from the Mining Congress in Denver, the Congress enjoyed an unusually good representation and a representation of exceptionally high-class men, including engineers and operators of fame. — *Leadville (Col.) Herald.*

Returning from Denver, where he attended the sessions of the American Mining Congress, George H. Dern, Salt Lake City mining man, said that he was particularly pleased with the spirit of sincerity, earnestness and fairness with which the big problems that are confronting the mining industry were approached. — *Bingham (Utah) Bulletin.*

Whether or not a person is interested in mining or oil, a visit to the exposition during the recent Mining Congress in Denver would be a profitable trip. In the displays were to be found about everything that is used in the mining and oil industry, from oil in the crude form up to the refined product. Machinery of all kinds were shown as well as all sorts of tools, blasting powder and other things, the entire exhibit being one of the most complete ever shown in the western country.—*Golden (Col.) Republican.*

Pronounced the most successful in matter of accomplishment in the history of the organization. The program in its entirety was carried through as scheduled and the further advancement of the mining industry will be brought about through the adoption of resolutions and provisions for an enlargement and increased activity.—*Boulder (Col.) Miner.*

Well attended and the best meeting in the history of the Congress.—*Rolla (Mo.) Era.*

One of the most important meetings of the American Mining Congress ever held.—*Kingman (Arizona) Miner.*

One of the big features at the session of the American Mining Congress in Denver was the display of mining and milling equipment held in conjunction with the session. Old timers say that the exhibits compared in magnitude with the displays at the Chicago and St. Louis fairs. Of course the exhibits at the world fairs were of greater magnitude, but from an educational standpoint they were not as complete. the American Mining Congress is to be congratulated upon the great exhibits it brought together for its session. The public was vitally interested and the display proved of great educational value.—*Denver Record.*

The Twenty-third Annual Convention of the American Mining Congress in Denver was attended by mining men from all over the country and the session was the most successful of any held since the organization was formed. Numerous subjects affecting the mining industry were gone into exhaustively and an important program of legislation that will be brought before Congress was agreed upon.—*Central City (Col.) Observer.*

The sessions of the American Mining Congress are of especial importance to the state of Arizona, as well as being of national significance.

Undoubtedly out of the conferences will come such a decision on the part of the great mining interests as will insure the revival of the industry under the benevolent assistance of the federal government. One could almost be safe in saying that the National Congress might well pass without material change such legislation as the Mining Congress asks, for the conclusion is obvious that their deliberations will point to a solution which, in reviving the industry, will increase the output of needed metals, speed up business, and give employment to thousands of skilled workmen.

The day has gone by when the people of the United States are ready to swat capital, merely because it is capital, and under the delusion that all swatting is progressive. Unfortunately much of it that has gone before has been nothing but destructive.

Senator Harding and a Republican Congress are pledged to the building of business, the commerce and the industry of the nation. In that condition, it is small wonder that the mining men gathered in Denver, are taking heart and tackling the problems of the future with faith.—*Tuscon (Ariz.) Citizen.*

The real leaders of the mining industry of the nation are Denver's guests this week. The Twenty-third Annual Convention of the American Mining Congress has brought together in this city men of unusual character and highest standing for conference and exchange of ideas upon advancement of the mineral, coal and oil productions necessary to the welfare of the country. They are the men of ability and initiative who keep their industry ever going forward, despite adversities. The business phases of their meetings, the phases of interest to all lines of activity, are particularly noteworthy and reflect the kinship and solidarity of all industry and all business.—*Denver Commercial.*

Constructive legislation for the benefit of the mining industry was recommended on a broad scale by the American Mining Congress at its meeting in Denver last week, which was one of the most important gatherings ever held by this organization. The discussions at the Congress and the various conferences of committees covered every phase of the industry, from the passing of the prospector, the labor problems, taxation, specific legislation, and on to the crisis that confronts the gold mining industry.

Taken in its entirety, the plans formulated by the Mining Congress for the advancement and protection of American mining was of a comprehensive and broad-gauge character, fostered by the foremost mining men of the nation, and the recommendations will undoubtedly have great weight and be accorded due consideration in the forthcoming National Congress at Washington.—*American Mine Reporter (San Francisco).*

ANTHRACITE SHIPMENTS CUT BY STRIKES

Anthracite shipments from April to October, inclusive, amounted to 39,720,654 gross tons, as compared with 41,771,313 during the same period of 1919. The decrease was 2,050,659 tons.

"The decreased tonnage this year was due almost entirely to the outlaw railroad switchmen's strike in April and to the various 'vacation' strikes of the miners in September," according to conclusions reached and announced by the Anthracite Bureau of Information, Philadelphia.

Average shipments for the five normal months of this period were 6,262,699 tons, but shipments during April were 1,448,486 tons below this figure, while the loss in September was 2,669,743 tons, or nearly twice as great. Total shipments for the period of seven months are more than 4,000,000 tons below what they should have been, and what they would have been but for the unauthorized rest periods taken by the switchmen and the mine workers.

Shipments by months follow: April, 4,814,211 tons; May, 6,155,878 tons; June, 6,319,957 tons; July, 6,389,-100 tons; August, 6,207,653 tons; September, 3,592,954 tons; October, 6,240,901 tons; total, 39,720,654 tons.

Census Bureau Compares Anthracite Operating Conditions

THE CENSUS BUREAU has issued a report comparing Pennsylvania anthracite operations in 1919 with those of 1909, showing a decrease in the number of breakers and wage earners. Wage earners decreased from 169,174 to 147,069, or thirteen per cent, although wages paid increased from $92,169,906 to $210,202,511 in the ten years covered. There was also a decided increase in operating costs. Coal production showed an increase of 6,302,000 tons, or 8.8 per cent, and value of output increased from $145,881,000 to $364,243,000.

War Minerals Claims Settled

WAR MINERALS CLAIMS to the number of 1,124 have been acted upon, leaving only 83 unsettled, according to a report of the War Minerals Commission which was complete to November 27. The commission expects to finish its work by February or March.

Claims for $15,827,479.62 were considered and awards totalling $2,357,491.35 were recommended. The total war minerals appropriation was $8,500,000. Administrative expenses have totalled 2.07 per cent of the settlements. Expenses and settlements amount to $2,687,-092.42. If the ratio of awards to claims, 32.9 per cent, is maintained with respect to the claims remaining to be adjudged, the commission will wind up its work with a balance on hand of $5,500,000, or considerably more than half the entire war minerals appropriation.

NATIONAL LEGISLATION

UP TO THE TIME we go to press, December 20, there have been introduced in the final session of the Sixty-sixth Congress 993 bills; 182 in the Senate, and 811 in the House. Many measures of interest to the mining industry are included, among them being bills providing for government control of the coal industry, suspension of annual assessment work on mining claims, suspension of immigration and emergency tariff schedules.

Hearings on tariff revision will be held by the House Ways and Means Committee beginning January 6. Those interested in metals and the manufacture thereof are scheduled to appear January 12, 13, 14.

Both Senate and House have passed the bill moving forward the time limit for doing 1920 annual assessment work from December 31, 1920, to July 31, 1921.

Senator Chamberlain has introduced a bill amending the mining laws, with particular reference to placer and quartz entries. The bill is reviewed in the following resume.

The House Ways and Means Committee is considering revision of internal revenue laws, and many of those interested have been granted hearings. Secretary of the Treasury Houston opposes the general sales or turnover tax and favors a general reduction of the higher surtaxes and increases in the lower surtaxes, and the repeal of the excess profits tax. He advocates increasing the normal income tax to six and twelve per cent.

Senators Calder, Edge and Kenyon each has issued statements advocating regulation of the coal industry. Their committee is preparing a measure which will soon be submitted to Congress.

At the suggestion of Congressman Garner, the McFadden bill has been referred to the Attorney General with a request for his opinion as to its constitutionality.

The House has passed the Senate bill which creates a commission of three senators and three congressmen to investigate government departments with a view to readjusting their activities so they will not overlap.

The Senate passed the Poindexter Anti Strike bill on December 16. A review of this measure is found in the following resume.

"*GENTLEMEN, BE SEATED*

—Satterfield, for the Newspaper Enterprise Association

The House passed a bill repealing war legislation, including the Lever Food and Fuel Act.

It is not anticipated that the Volstead bill on blue sky legislation will be considered at this session, largely because of the shortness of the session and the committee's inability to draft a satisfactory measure.

The following is a resume of the more important measures of interest to the mining industry now before Congress:

COAL

H. R. 14755. (*Regulating price and sale.*) Introduced by Mr. McLane; referred to the Committee on Interstate and Foreign Commerce. The bill provides that the Interstate Commerce Commission shall be empowered to fix the price of coal, kind and quality considered, whenever and wherever sold either by producer or dealer; to establish rules for the regulation of and to regulate the method of production, sale, shipment, distribution, apportionment, or storage thereof among dealers and consumers; and to have such other powers relating thereto as it now exercises over railroads and common carriers. The commission, however, shall not fix prices at small mines producing coal for local consumption unless so requested by petition or complaint; neither shall it be required to fix prices for the sale of coal by retailers unless similarly requested. Section 2 provides that any committee or agent authorized to represent a city, town, state, or group of the same, upon application to the Interstate Commerce Commission shall be issued a permit giving access to any records which have to do with the production, sale, shipment, transportation, distribution, apportionment, or storage of coal as will give adequate information, whether or not the provisions of this act are complied with and observed. Section 3 provides that until such time as the commission can put into effect its control of the coal industry the following regulations are to govern the production and sale of coal: "The wholesale price of coal, kind and quality considered, at any mine shall in no case exceed the 'base price,' so called, fixed by the authority of the federal government. The wholesale price of coal not at the mine and sold through a broker or agent shall in no case be more than 20 cents a ton in advance of the base price at the mine plus the authorized transportation charge from the mine. In the sale and shipment of coal at the mines and elsewhere, orders from consumers and from dealers selling directly to consumers shall take precedence over all other orders. No coal shall be sold for shipment out of the country until, in the judgment of the Interstate Commerce Commission, the needs of domestic consumers and retail dealers have been supplied or cared for."

H. Res. 612. (*Monopolistic control of coal.*) Introduced by Mr. Lampert; referred to the Committee on Interstate and Foreign Commerce. This bill directs the Federal Trade Commission to make a survey of all coal-bearing lands in the United States and its possessions, to ascertain the present value of all coal lands and coal mines, including machinery and other equipment used in mining, and to report to the House of Representatives at as early a date as practicable, and not later than December 1, 1921, and it provides further that there shall be appropriated a sum not exceeding $50,000 for that purpose.

STRIKES

S. 4204. Introduced by Mr. Poindexter on April 12, 1920; referred to the Committee on Interstate Commerce, from which committee it was reported. This bill passed the Senate on December 16. There were, however, only a few senators present. The bill has previously been reviewed in the MINING CONGRESS JOURNAL. It provides a fine of $10,000 or imprisonment not exceeding ten years, or both, for whoever shall interfere with the movement of commodities in commerce with foreign nations or among the several states, by word of mouth or by circulation of written words, or who shall otherwise attempt to induce or persuade any person employed by any carrier under the act to regulate commerce or amendments thereto to quit such employment. Section 2 provides a fine of $15,000 or imprisonment not exceeding fifteen years, or both, for whoever shall interfere with the movement of commodities by force or violence, or by threat or menace of any kind prevent or seek to prevent persons from engaging in employment or from continuing in employment in any capacity in the production or operation of any means or agency to carry on interstate commerce. Section 3 provides a fine of not exceeding $10,000 or imprisonment not exceeding ten years, or both, for whoever shall interfere with the movement of commerce by injuring or destroying any car, bridge, track, ship, etc., or shall persuade others so to do. Section 4 provides that it is unlawful for two or more persons, being officers, directors, managers, agents, attorneys, or employees of any carriers subject to the act to regulate commerce for the purpose of maintaining, adjusting, or settling any dispute, demand, or controversy which, under the provisions of this act, can be submitted for decision to the Committee of Wages and Working Conditions or to a regional board of adjustment, to enter into any combination or agreement with intent substantially to hinder, restrain, or prevent the operation of trains or other facilities of transportation for the movement of commodities or persons in interstate commerce. Upon conviction such persons shall be punished by a fine not exceeding $500 or by imprisonment not exceeding six months, or both.

GOVERNMENT DEPARTMENTS

H. R. 14757. (*Creating a Department of Conservation.*) Introduced by Mr. McDuffie; referred to the Committee on Agriculture. The bill provides for an executive department of the government to be called the Department of Conservation, with a secretary who shall receive a salary of $12,000 per annum, an assistant secretary at $8,000 per year and such other assistants as is necessary. It transfers the Forest Service and the Bureau of Biological Survey from the Department of Agriculture to the proposed new department, the Geological Survey and the National Park Service from the Interior Department and the Bureau of Fisheries from the Department of Commerce. Under this new department shall be created a bureau to be called the Bureau of Birds and Game. The secretary of conservation must collect, collate, and report at least once a year full and complete statistics relating to the natural resources of the United States. He shall have the power to adopt such course as in his judgment may result in the conservation of the natural resources of the United States or any part thereof whenever an emergency arises and to take such action as may seem to him to be wise and in the interest of the people of the country; and shall be vested with the exclusive power of making leases with private individuals or corporations, or of issuing permits, to make use of any timber, water power, water, or minerals or any other natural resources on or in any of the national parks, etc.

DEPARTMENTAL REORGANIZATION

S. J. Res. 220. (*Creating a joint commission for the reorganization of the executive departments.*) Introduced by Mr. King; referred to the Committee on Appropriations. The bill provides that a joint commission of Congress, to be designated the "Joint Commission on Reorganization," shall be created. The commission shall be composed of three senators and three representatives, whose duty it shall be to make a visitation, examination, and investigation of the executive departments and agencies of the government, to ascertain their several powers, functions, and duties as prescribed by law and as actually rendered and performed, to discover conflicts or repetition of work and to recommend such re-allocation of such work, functions, and powers to the several departments and agencies as shall bring the whole of the same into such order and correlation as shall secure the most facile and effective administration.

S. 4613. (*Bureau of Veteran Re-establishment.*) Introduced by Mr. Capper; referred to the Committee on Finance. The bill creates in the Department of the Interior a bureau to be known as the Bureau of Veteran Re-establishment, with a director at a salary of $10,000 per year. The functions and duties conferred upon the Bureau of War Risk are transferred to the proposed bureau as is also the act to provide for vocational rehabilitation. The functions of the United States Public Health Service are also transferred. All sums heretofore appropriated for the purpose of carrying out the provisions of the War Risk Insurance Act, etc., are transferred to the proposed new department.

MINING LAWS

S. 4571. (*Amending United States mining laws.*) Introduced by Mr. Chamberlain; referred to the Committee on Mines and Mining. The bill provides that in order to obtain title to mineral lands of the United States it shall be necessary to proceed in the following manner: If the entry be placer in character and no record thereof has theretofore been made, there must be filed in the local land office for the district in which such mineral land is situated an application for entry, which application shall consist of an affidavit upon a form to be approved by the Secretary of the Interior. If a record has been made of the entry in the office of the county clerk, a certified copy of the original notice of location, together with the affidavit of the applicant that the claim is valid and that all assessment work now required has been performed, is all that is necessary. Application for quartz entry shall be made in the same manner as that required for placer entries except if the entry does not conform to legal subdivisions of surveyed land, or cannot be made to conform on unsurveyed land, then the applicant must, before filing application for entry, erect, or cause to be erected, such monuments as shall plainly mark the boundaries of his claim. Upon the filing in a local land office of an application for mineral entry or of a certified copy of original notice of location, the register shall immediately assign the same the current serial number and proper notations shall be made upon the serial register. Final proof may be made on a mineral entry in substantially the same manner as now required by law of a homestead entryman. The same proof of labor or assessment work as is now required by law shall be executed each year by a mineral claimant. The time in which final proof may be made on any mineral entry is limited to five years from date of allowance by register of the local land office, except upon application of the entryman, accompanied by such proof or data as the Secretary of the Interior may require. The Secretary of the Interior shall extend the time for final proof, not to exceed five years additional from date of entry, or final proof may be made at any time during the five-year period upon satisfactory proof to said examiner and register that the sum of $500 has been expended upon each entry upon which proof is offered that mineral in paying quantities has been discovered. A mineral entry may be relinquished in manner now provided by law for relinquishment of an agricultural entry or may be cancelled by the Commissioner of the General Land Office after due notice to the entryman, as now provided by law for the cancellation of desert-land entries. All applications, affidavits, and proofs required shall be executed before an officer qualified to act in homestead cases, except that yearly proofs of labor or assessment work may be executed before any officer having a seal. Registers and receivers of local land offices are to receive a fee of $5 for filing and acting upon each application and $1 for filing and noting each yearly proof of labor or assessment work.

TARIFF

H. R. 14463. (*Asbestos.*) Introduced by Mr. Watson; referred to the Committee on Ways and Means. The bill provides that asbestos unmanufactured, crude, fiber, stucco, sand, or refuse containing not more than 15 per cent of foreign matter shall be exempt from duty. Upon asbestos paper and millboard and articles manufactured therefrom there is a duty of 5 cents per pound; asbestos paper and millboard manufactured from long fiber asbestos for gaskets, electrical papers not exceeding five one-thousandths of an inch in thickness, or articles manufactured therefrom, 10 cents per pound. A duty of 1½ cents per square foot and 3 cents per square foot if exceeding ¼ of an inch in thickness is imposed on articles composed of asbestos and cement, containing not more than 33 1-3 per cent of asbestos and not exceeding ¼ of an inch in thickness; asbestos wick and rope, or articles manufactured therefrom, 35 cents per pound; asbestos woven sheet packing, exceeding one-thirty-second and not exceeding one-eighth of an inch in thickness, 50 cents per pound; asbestos gaskets folded or cut from the straight sheet, rubberized, graphited, or otherwise treated with waterproofing or lubricating compound, 65 cents per pound; asbestos yarn containing more than 10 per cent of foreign matter, 50 cents per pound.

AMENDING CONSTITUTION

H. J. Res. 391. (*Amending the Constitution.*) Introduced by Mr. Hull; referred to the Committee on Judiciary. The bill provides that the House of Representatives of the United States shall be composed of not more than four hundred and fifty members, not including delegates or resident commissioners: and that when a state is admitted into the Union the representation to which it shall be entitled until the next succeeding apportionment shall be in addition to the limit herein fixed.

H. J. Res. 385. Introduced by Mr. Ayres; referred to the Committee on Judiciary. The bill provides that the President shall have power, by and with the advice and consent of the Senate, to make treaties provided a majority of the senators present concur.

ANNUAL ASSESSMENT

S. 4564. (*Amending the revised statutes.*) Introduced by Mr. Henderson; referred to the Committee on Mines and Mining. The bill provides that Section 2324 of the Revised Statutes be amended to provide that the period within which work required to be done annually on all unpatented mineral claims shall commence on the first day of January succeeding the date of location of such claims and that the period within which work is required to be done annually on all other unpatented mineral claims in the United States and Alaska shall henceforth commence on the first day of July of each year. Also provided that the period for performing the work required by section 2324 of the Revised Statutes, as extended to the Territory of Alaska, and by this act beginning the first day of January, 1920, which, but for this act would expire the thirty-first day of December, 1920, is extended to and including the thirtieth day of June, 1921.

S. 4555. Introduced by Mr. Smoot; referred to the Committee on Mines and Mining. This bill is identical with the bill just above reviewed.

Bills were introduced by Senators Henderson and Smith and Representatives Hayden, Evans of Nevada, and Taylor of Colorado The bill introduced by Mr. Taylor of Colorado has met with the general endorsement of those interested, in that it provides that the time required for annual assessment work be extended to July 1, 1921. All bills introduced are substantially the same.

REVENUE

S. 4538. (*Amending Revenue Act.*) Introduced by Mr. Gay; referred to the Committee on Finance. The bill provides that subdivision (a) of section 250 of the Revenue Act be amended to provide that the fourth and last installment of taxes, which but for this amendment, would be payable in cases where return was made on the basis of the calendar year, on December 15, 1920, shall be payable in five installments, each consisting of one-fifth of the total amount of such fourth and last installment. The first of such five installments shall be payable on the fifteenth day of December, 1920, and the remaining four-fifths in equal amounts on the fifteenth day, respectively, of the four months next succeeding.

H. R. 14761. (*Amending Revenue Act.*) Introduced by Mr. Burroughs; referred to the Committee on Ways and Means. The bill amends Section 204 of the act by providing that if for any taxable year beginning after October 31, 1918, it appears upon the production of evidence satisfactory to the commissioner that any taxpayer has sustained a net loss, the amount of such net loss shall be deducted from the net income of the taxpayer for the preceding taxable year; and the taxes imposed by this title and by Title III for such preceding taxable year shall be redetermined accordingly. Any amount found to be due to the taxpayer upon the basis of such redetermination shall be credited or refunded to the taxpayer in accordance with the provisions of Section 252. If such net loss is in excess of the net income for such preceding taxable year, the amount of such excess shall, under regulations prescribed by the commissioner with the approval of the secretary, be allowed as a deduction in computing the net income for the succeeding taxable year. Section II provides that Section 214 (a) (12) shall be so amended as to provide that at the time of filing return for any taxable year a taxpayer may file a claim in abatement based on the fact that he has sustained a substantial loss resulting from any material reduction of the value of the inventory for such taxable year, or from the actual payment after the close of such taxable year, of rebates in pursuance of contracts entered into during such year upon sales made during such year. Section 234 (a) (14) is amended to provide that at the time of filing return for any taxable year a taxpayer may file a claim in abatement based on the fact that he has sustained a substantial loss. In such case payment of the amount of the tax covered by such claim shall not be required until the claim is decided, but the taxpayer shall accompany his claim with a bond in double the amount of the tax covered by the claim with sureties satisfactory to the commissioner, conditioned for the payment of any part of such tax found to be due, with such interest. If any part of such claim is disallowed, then the remainder of the tax due shall, on notice and demand by the collector, be paid by the taxpayer with interest at the rate of one per cent per month from the time the tax would have been due had no such claim been filed. If no such claim is filed, but it is shown to the satisfaction of the commissioner that during the taxable year next following the filing of such return the taxpayer has sustained a substantial loss of the character above described, then the amount of such loss shall be deducted from the net income for the taxable year covered by such return and the tax imposed by this title for such year shall be redetermined accordingly. Any amount found to be due to the taxpayer upon the basis of such redetermination shall be credited or refunded to the taxpayer, in accordance with the provisions of Section 252.

H. R. 14956. (*General sales tax.*) Introduced by Mr. Mott; referred to the Committee on Ways and Means. The bill provides that in lieu of the war profits and excess-profits tax imposed by Title III; and of the tax on non-alcoholic beverages; the tax on admissions; excise taxes, but in addition to all other taxes, there shall be levied, assessed, collected, and paid upon (1) tangible property; (2) patents, trade-marks, copyrights, good will, franchise, and options; (3) bonds, debentures, certificates of indebtedness, and other instruments, however termed, issued by any corporation, with interest coupons or in registered form, known generally as corporate securities; (4) shares of certificates of stock or of profits, or of interest in property or accumulations, in any corporation, or rights to subscribe for or to receive such shares or certificates; and (5) light, heat, and power, sold, bartered, or exchanged (except on the installment plan), a tax equivalent to 1 per cent of the price for which so sold. Section 3 provides that there shall be levied, assessed, collected, and paid in addition to all other taxes save those specifically repealed by this act a tax equivalent to one per cent of the amount received for the enjoyment or use of property, privileges, rights, services, or facilities; from the loaning of money or the discounting of commercial or other paper by any person carrying on such business, but not including the return of the principal; and from the sale, or contract of sale, made under the installment plan, of any of the property specified in Section 2. The tax imposed applies in the case of contracts, discounts, or sales, whether made before or after the passage of this act; but shall not apply to amounts received for personal services rendered by the individual taxpayer, transportation of property by rail or water, or by any form of mechanical motor power when in competition with carriers by rail or water. (3) transportation of oil by pipe line, transportation of persons by rail or water, or by any form of mechanical motor power on a regularly established line when in competition with carriers by rail or water, transmission of intelligence by wire or wireless, of use of seats, berths, or staterooms in parlor cars, sleeping cars, or on vessels. The taxes imposed by Sections 2 and 3 are to be computed on the gross amounts received, excepting in the case of real estate brokers, rent collectors, etc., engaged in the sale, barter, exchange, or lease of property, real or personal, tangible or intangible, but in which they have no legal title, or take title solely to enable them to sell as brokers, and act wholly as agents; or engaged in the collection of money for the use or enjoyment of property, rights, privileges, services, or facilities, in which they act as agents for the owners and have no title in themselves, in both of which cases the tax imposed shall be one per cent of the commission and not of the gross amount received from such sale or lease. This act does not apply to sales made or amounts received during any month in which the sum of the price for which taxable sales are made, plus the taxable amounts received, do not exceed $200. The United States, foreign governments, any state or territory or political subdivision thereof or the District of Columbia, any mutual ditch or irrigation company, any hospital or any corporation organized and operated exclusively for religious, charitable, scientific, or educational purposes, or for the prevention of cruelty to children or animals, no part of the net earnings of which inures to the benefit of any private stockholder or individual, are exempt from the taxes imposed by the act. Section 7 of the bill provides that in computing the taxes imposed by the act no credit shall be allowed for any tax reimbursed or paid in any manner or to any person, in connection with any previous transaction in respect to which a tax is imposed by law. A fine of $1,000 or imprisonment for one year or both will be imposed for violation of the act. The act shall go into effect three months from the first day of the month next following its passage.

H. J. Res. 415. (*Extending time for payment of taxes.*) Introduced by Mr. Edmonds; referred to the Committee on Ways and Means. The bill provides that all penalties for non-payment of tax, excepting interest, enforceable under the act entitled "An Act to provide revenue, and for other purposes," approved February 24, 1919, and due on December 15, 1920, shall be suspended for a period of fifty days and shall be enforceable on February 15, 1921.

FEDERAL RESERVE ACT

H. R. 14904. (*Amending Federal Reserve Act.*) Introduced by Mr. Young; referred to the Committee on Banking and Currency. Section 7 of the Federal Reserve Act is amended to provide that the net earnings derived by the United States from Federal Reserve banks shall, in the discretion of the secretary, be used to supplement the gold reserve held against outstanding United States notes, or shall be applied to the reduction of the outstanding bonded indebtedness of the United States under regulations to be prescribed by the Secretary of the Treasury, provided, however, that the Secretary of the Treasury, in his discretion, may deposit each year during the years 1921 and 1922 not to exceed in the aggregate $50,000,000 of the net earnings which shall be derived by the United States from the federal reserve banks for each of the years 1920 and 1921 in the federal land banks at rates of interest equal to those of current rates on treasury certificates, to be used by said banks in rediscounting cattle loan paper and notes secured by live stock with the indorsement of responsible banks, the loans not to exceed in any instance two years, and to be made under such rules and regulations as the Federal Farm Loan Board shall prescribe.

H. R. 14903. (*Amending Section 10.*) Introduced by Mr. McFadden; referred to the Committee on Banking and Currency. The bill amends Section 10 of the Federal Reserve Act by providing that the Federal Reserve Board shall consist of seven members, each of whom shall receive a salary of $12,000 per year. This board shall have power to do all things now done by the bureau or the comptroller of the currency. It completely removes the Federal Reserve Board from the jurisdiction of the Treasury Department, abolishes the office of the comptroller of currency and authorizes the Federal Reserve Board to perform all duties heretofore performed by the comptroller of currency or the bureau of which he is the chief officer.

S. 4575. (*Amending Federal Farm Loan Act.*) Introduced by Mr. Hitchcock; referred to the Committee on Banking and Currency. This amendment to the above-mentioned bill provides that the Secretary of the Treasury in his discretion may use not to exceed $60,000,000 of the net earnings which shall be derived by the United States from the operation of the federal reserve banks in any one year to purchase debentures or other similar obligations issued by the federal land banks. On and after the date on which the act shall become effective the federal land banks are authorized to issue and sell to the Secretary of the Treasury and other purchasers debentures or other similar obligations bearing interest not to exceed six per cent, the proceeds of which shall be used to make loans as provided by the original act. Any federal land bank may at any time repurchase at par and accrued interest for the purpose of redemption any debentures so purchased by it and held in the treasury.

S. J. Res. 222. Introduced by Mr. Sterling; referred to the Committee on Banking and Currency. This will provides that the Secretary of the Treasury may use $100,000,000 of the net earnings derived from the federal reserve banking system for the purpose of allotment to the several federal land banks, approved by the Federal Farm Loan Board for use in the purchase of paper based on staple agricultural products or live stock. No loan, under the act, shall be for a longer period than nine months if based on agricultural products or longer than two years if based on live stock. Loans shall bear interest at the rate of six per cent if the loan be for a period of six months or less; or if for a longer period than six months, payable semi-annually in advance, but any borrower may be charged for the expenses incident to his loan a sum to be approved by the Federal Farm Loan Board, not exceeding an amount equal to two per cent per annum for the period of the loan.

S. 4560. Introduced by Mr. Harris; referred to the Committee on Banking and Currency. The bill provides that upon its passage the rate of interest which the reserve banks of the Federal Reserve Board system is authorized to charge member banks on any contract, agreement, or any other financial transaction had with them shall be five per cent per annum and that it shall be unlawful for them to charge any greater rate of interest.

H. R. 14464. (*Amending Farm Loan Act.*) Introduced by Mr. McLaughlin; referred to the Committee on Banking and Currency. The bill amends the original Farm Loan Act by providing that the amount of loans to any one borrower shall in no case exceed a maximum of $10,000, nor less than $100; that where the loan is desired for the purchase of land for agricultural purposes, a loan to any one borrower may, in the discretion of the Federal Farm Loan Board, be made in any sum not to exceed $25,000.

INTERSTATE COMMERCE

H. R. 14901. (*Amending Interstate Commerce Act.*) Introduced by Mr. Esch; referred to the Committee on Interstate and Foreign Commerce. The bill repeals Section 10 of the act to supplement existing laws against unlawful restraints and monopolies and amends Section 20a by providing that after December 31, 1921, no common carrier engaged in commerce shall have any dealings in commerce or shall make any contracts for construction or maintenance of any kind, to the amount of more than $50,000 in any one transaction with another corporation, firm, partnership, or association when the common carrier shall have upon its board of directors, or as its present or general manager or selling officer any person who is at the same time a director, president, or general manager of the bidding firm. No bids shall be considered unless the names and addresses of the officers, directors, etc., be given in the bid. If any common carrier violates the provisions of the act, it shall be fined not exceeding $25,000 and every officer thereof who shall vote for or direct the act knowing that it constitutes such violation shall be fined $5,000 or confined in jail not exceeding one year, or both.

S. 4524 Introduced by Mr. Pittman; referred to the Committee on Interstate Commerce. This bill amends Section 4 of the Interstate Commerce Act by providing that it shall be unlawful for any common carrier to charge or receive any greater compensation in the aggregate for the transportation of passengers, or of like kind of property, for a shorter than for a longer distance over the same line or route in the same direction. Wherever a carrier by railroad shall in competition with a water route or routes reduce the rates on the carriage of any species of freight to or from competitive points it shall not be permitted to increase such rates unless after hearing by the commission it shall be found that such proposed increase rests upon changed conditions other than the elimination of water competition.

S. 4576. Introduced by Mr. Frelinghuysen; referred to the Committee on Interstate Commerce. This bill is identical with the bill reviewed above presented by Mr. Esch.

FOREST EXPERIMENT STATION

H. R. 14477. Introduced by Mr. Timberlake; referred to the Committee on Appropriations. The bill appropriates the sum of $30,000 to be available during the fiscal year ending June 30, 1922, to enable the Secretary of Agriculture to maintain the forest experiment station in the state of Colorado for the purpose of conducting in Colorado and neighboring states silvicultural, dendrological and other experiments and investigations, independently or in co-operation with other branches of the federal government.

IMMIGRATION

H. R. 14461. Introduced by Mr. Johnson of Washington; referred to the Committee on Immigration, from which committee it was reported to the House of Representatives and passed by that body on December 13th, 1920. The bill provides for the temporary suspension of immigrants. Section 2 provides that from sixty days after the passage of the act until the expiration of fourteen months after its passage immigration of aliens to the United States is prohibited, during which time it shall not be lawful for any alien to enter the United States or to remain within the United States. The following exceptions are provided in the bill: government officials, their families, attendants, servants, and employees; travelers or temporary sojourners for pleasure or business who may enter the United States during the time of suspension of immigration for a period not exceeding six months each; bona fide students who may enter the United States solely for the purpose of study; ministers of any religious denomination; and aliens belonging to either of the classes previously mentioned shall be permitted to enter the United States only upon presentation of a valid passport satisfactorily establishing his identity, nationality and the class to which he belongs. Proper safeguards are made surrounding the passports and numerous regulations are provided which immigrants must adhere to. Copies of this bill will be furnished to interested parties upon request.

S. 4627. (*Limiting immigration.*) Introduced by Mr. Dillingham; referred to the Committee on Immigration. The bill provides for a joint committee of the Secretaries of State and Labor to prepare a statement showing the number of persons of the various nationalities now residents in the United States, as determined by the census next preceding, which statement is to be the population basis for the purposes of the act, but if by reason of changed political boundaries in foreign countries occurring between United States census periods such population basis shall not be applicable then the above-mentioned officials shall estimate the number of persons of the nationalities concerned, which estimate shall be the population basis. When the maximum number of aliens of any nationality who may be admitted in any fiscal year under the act shall have been admitted, all others shall be excluded. Proper reservations are made for relatives of immigrants already here.

WAR FINANCE BOARD

House Concurrent Res. 67. (*War Finance Corporation.*) Introduced by Mr Steagall; referred to the Committee on Banking and Currency. This resolution provides that the Secretary of the Treasury, members of the War Finance Corporation, and its officers are empowered and directed to resume activities of the War Finance Corporation and to assist in conducting and financing the exportation of goods, commodities, and products of American farms, mines, and manufactures in accordance with the purposes and provisions of the act creating the War Finance Corporation and amendments thereto, and that the Federal Reserve Board is directed to take such action as may be necessary to permit member banks of the Federal Reserve System to grant liberal extensions of credit to farmers, merchants, and manufacturers upon products and securities held by them.

DISARMAMENT

S. J. Res. 225. Introduced by Mr. Borah; referred to the Committee on Foreign Relations. Providing that the President of the United States is requested to advise the governments of Great Britain and Japan that this government will at once take up directly with their governments and without waiting upon the action of any other nation the question of disarmament, with a view to reducing the navies of the United States, Great Britain and Japan during the next five years fifty per cent of the present estimate of figures.

COLLECTIVE MARKETING

H. R. 14896. (*General system for cooperative marketing.*) Introduced by Mr. Sinclair; referred to the Committee on Agriculture. The bill appoints a commission to consist of three members, each having special knowledge in the co-operative handling and marketing of grain cereal products and horticultural products. The commission shall devise a plan of local organization of producers to provide a system for terminal marketing places with a view to bringing the producer and the ultimate consumer into as nearly direct relation and communication as possible; all of these agencies are to be under the direct supervision of the United States government through the Secretary of Agriculture. The bill provides the sum of $30,000 for the payment of salaries, etc.

DEPARTMENT OF LABOR

S. 4527. (*Amending act creating Department of Labor and Department of Commerce.*) Introduced by Mr. King; referred to the Committee on Judiciary. The bill provides that there shall be provided an Assistant Secretary of Labor and an Assistant Secretary of Commerce, which appointment shall be filled by the President, by and with the advice and consent of the Senate.

WATER POWER

S. 4554. (*Amending Federal Power Commission Act.*) Introduced by Mr. Jones of Washington; referred to the Committee on Commerce. The bill provides that hereafter no license, lease, or authorization for dams, conduits, reservoirs, power houses, transmission lines, or other works for storage or carriage of water, or for the development, transmission, or utilization of power, within the limits of any national park or national monument shall be granted or made without specific authority of Congress, and so much of the Act of Congress approved June 10, 1920, entitled "An Act to create a Federal Power Commission; to provide for the improvement of navigation; the development of water power; the use of the public lands in relation thereto; and to repeal Section 18 of the River and Harbor Appropriation Act, approved August 8, 1917, and for other purposes," approved June 10, 1920, as authorizes licensing such uses of national parks and national monuments by the Federal Power Commission is hereby repealed.

BOLSHEVISM

H. R. 14658. Introduced by Mr. Emerson; referred to the Committee on Post Offices and Post Roads. The bill provides that any person found guilty of sending any publication or printed matter through the mails that contains any statement or article the obvious purpose of which is to stir up radical or religious hatred shall be fined not to exceed $5,000, or imprisoned for five years, or both.

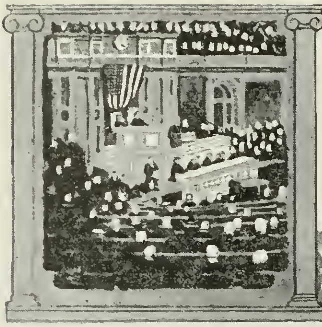
GYPSUM DEPOSITS

Gypsum deposits in the United States are described in a bulletin just issued by the Geological Survey. Gypsum is the rock used for making plaster of paris and hard wall plaster, and is also an ingredient of Portland cement. It likewise is used as a fertilizer. The bulletin shows that gypsum is distributed from New York to California and from Michigan to Texas. The deposits in some states are so small that they may be worked out in a few years; those in other states, like Wyoming and New Mexico, consist of thick beds that crop out at the surface for hundreds of miles and that are seemingly inexhaustible.

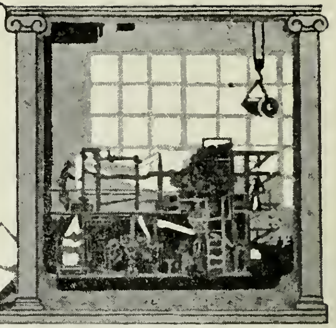
THE UNITED STATES WEARING AWAY.—An average of 95 tons of soil, pebbles, and loose rock is carried by the rivers into the ocean every year from every square mile of the United States, according to the United States Geological Survey, Department of the Interior. The immensity of this contribution may be better comprehended when it is realized that the surface of the United States covers 3,088,500 square miles.

Immense Coal Reserve.—The Bull Mountain coal field, in Musselshell county, Mont., according to an estimate made by the United States Geological Survey, contains nearly five billion tons of coal. A small part of this immense reserve of coal has already been mined, but by comparison with the total in the ground, the quantity mined is practically negligible.

Oil in By-Product Sands.—From data collected by the United States Geological Survey, it is estimated that 2,359,000 barrels of oil, valued at more than $3,500,000, could be obtained from the sand piles about producing wells in California and from outcroppings in the vicinity of the fields. Also, it is claimed, many times that amount of oil might be recovered from seepage over the oil-producing area. By seepage, in this case, is meant oil which is permitted to return into the ground or remain on the surface of oil-saturated sand.



PUBLIC OPINION



The Government in Industry

LARGE GOVERNMENT EXPENDITURES have been opposed by no one more consistently than by SENATOR CHARLES S. THOMAS of Colorado, who is unalterably against "parental government." In discussing the proposed bill for the amendment to the Federal Reserve Act, in regard to financing the farmers, Senator Thomas said:

"I am willing to do all reasonable things for the benefit of the farmer and since I have been a member of the Senate there has been about as much class legislation, perhaps, as has been enacted in any similar previous period of time. The government is not organized as a universal hospital to cure the commercial and economic accidents and diseases of all mankind. It was created to protect the citizen and enable him to function on his own account; and I think that the most pernicious consequence of this kind of legislation is the fact that it is depriving the people of the country of that element of self-reliance, personal ambition and the desire to succeed which lies at the foundation of all individual and national prosperity. Why should I exert myself unduly in order to succeed, if, when I fail, the government is to catch me. That is our modern idea, so far as our practice goes, of government; and, as a consequence, we have one hundred and twenty-five lobbies, all with their hands and their tongues out, and both stretched in the direction of the United States treasury.

"I was called into the lobby a short time ago by some gentlemen who are here who want some money for good roads. They said they certainly expected that I would assist them to the best of my ability. I told them I would. I informed them that up to this time I had unsuccessfully opposed every such measure, and by opposing theirs I would guarantee its passage. I also told them that inasmuch as we only had a little deficiency of a billion and a quarter staring us in the face, and a demand for two and a half billions for a bonus, and a bill practically appropriating five hundred millions now before the Senate, if there was anything left I thought they ought to have it for good roads; hence they would receive it unless the bottom of the treasury should be reached, in which event they ought to apply and perhaps would be treated as preferred creditors."

SENATE DISCUSSION on the bill legalizing associations of farmers brought forth the following from SENATOR KELLOGG of Minnesota:

"I do not believe that the government should go into business and compete in the interest of the people with private enterprise. I believe that private enterprise must operate the industries of this country, that there must be the individual hope of gain and of betterment of condition and the enterprise incident to the splendid American spirit in order to make them successful. Either we are going to allow industry to organize and have good and stable market conditions or we will have state socialism.

"I am not in favor of permitting the unlimited organization of monopolies to throttle the American people, but I am in favor of permitting reasonable co-ordination and co-operation. I do not think there is any great danger to the people in this plan. I do not pretend that it does not make some changes in the Sherman Anti-Trust Act. I do not consider that a holy document that can not be touched when the business conditions of the country demand it. I am in favor of preserving its principles for the protection of the American people, but I am also in favor of modifying it, when it is necessary for the real benefit of the American people and the development of trade and markets."

WITH PESSIMISM RUNNING RIOT, it is encouraging to have such men as W. P. G. HARDING, governor of the Federal Reserve Board, give such assurance to industry as was carried in his article in the December issue of *System:*

"You can liken the business and financial world to a crowd in the theater. When the show is going along smoothly every one is happy, but let somebody yell 'fire' and in an instant a part of the audience is a surging mob trying to get out of the doors. It is quite the same in business. The danger of another financial panic in this country is so small as to be negligible. A depression in business must not be confused with a panic. When people feel prosperous they begin to buy and then prices and wages go up, plants are extended until we find that many business men are trying to do more than their capital will warrant. No one pays much attention to costs, for profits become very large and this still further stimulates extravagant buying and consequently speculation. People always speculate when prices are rising. Since the armistice, for instance, literally tons of worthless securities have been sold to small buyers who are lured into believing that any kind of enterprise will be successful. The moment the mass of the people begins to worry about high prices, the temper of business starts to change. The depressed period does not commonly extend through a very long time.

"One has to be knocked down every little while in order to learn how to fight

"Under present conditions no emergency demand for money will more than inconvenience a well-managed bank, for the facilities are at hand to turn enough liquid assets into cash and without loss to meet the demands.

"The Federal Reserve System has not only provided but also has marked the exits, so the people need not fear that their way out may be blocked."

Tariff Measures

THE PROTECTIVE TARIFF question is not essentially a Republican issue. This country is gradually recognizing the fact that many of our industries in order to survive must be protected with a tariff which will enable them to compete with the cheap labor of foreign countries. SENATOR MILES POINDEXTER, in discussing this subject, said:

"The most active agitation in behalf of restoration of protective tariff duties comes from a section of the country which has hitherto been most strongly opposed to the principle of protection. The peanut, cottonseed oil, mohair, and wool producers of the southwest are vehement in their demand for protection of their industries from the destructive competition of foreign producers.

"A compilation of the statistics of the seven years under Republican tariff laws shows that there were imports of almost \$10,500,000,000 on which duties were collected to the amount of \$2,200,000,000, or an average rate of twenty-one per cent, while during seven years of the succeeding Democratic tariff law there were imports of $19,705,000,000, on which duties were collected to the amount of only $1,631,000,000, or an average of eight per cent. The treasury has lost nearly $4,000,000 in revenue at a time when revenue was one of our greatest needs. Producers of all commodities that come into competition with the products of other nations where labor is cheap and standards of living low are vitally concerned with the restoration of an import duty which shall represent at least the difference in cost of production at home and abroad."

WITH THE ASSURANCE which the Congress coming in on March 4 brings to the country of a revision of our tariff laws, much of interest is appearing in our newspapers concerning the subject. The *American Metal Market* says the following editorially:

"A good test of a man's broad-mindedness, if not, indeed, of his intelligence, is his attitude on the tariff in the new circumstances produced by the war. The stock arguments before the war, pro and con, are out of date. There was, for instance, the dictum that the south needed free trade for the benefit of its cotton industry. Now the south wants a tariff on peanuts and tobacco and is willing to swallow the whole protective tariff principle in order to get what it wants.

"Then there is the 'infant industry' idea. Finally, the basis of much of the protectionist argument of the old days, that of high wages being produced, fits poorly with the preachings of today that we are ruined by high wages.

"Nevertheless the matter of tariff is a more live and important issue than ever before. Instead of needing just enough tariff to get along with, as before the war, we now need all the tariff we can risk putting on.

"The needs of the tariff now run chiefly along four lines:

"(1) To protect industries.
"(2) To produce revenue.
"(3) To encourage exports.
"(4) To further the restoration of exchange rates.

"As to protection, there must be wise discrimination. It would be idle to argue otherwise, else why not simply enact a blanket 25 per cent or 50 per cent ad valorem rate? That would protect our industries, like the Republicans used to want, and at the same time put a stiff duty on the things we do not produce, which was precisely what the Democrats used to clamor for. Everybody would be satisfied. In respect to the protective feature, the tariff should be set for each commodity we manufacture in accordance with the class of competition to which our producers are exposed. For illustration, there should be a higher tariff on products of Chinese labor than on products of French labor.

"As to revenue, one who has, unconsciously perhaps, judged the importance of the tariff by the amount of talk about it rather than by the results, should take a moment to consider actual revenue figures. For a whole century our tariff revenue has totaled less than fifteen billion dollars. The best fiscal year, 1910, showed a third of a billion. These revenues are very small compared with our requirements. The revenue from the 1913 tariff has been particularly poor, but the up-to-date comparison is that the first three months of the present fiscal year showed a revenue rate a shade in excess of the record year, 1910.

"The third point, the encouragement of exports, require no argument. Everyone agrees that we want a large export trade.

"In normal times for exchange there is always need for equalization, and that equalization is effected by gold movement. A very small divergence produces a gold movement, and buyers and sellers of commodities do not feel a ripple. Now they have violent fluctuations from day to day because the equalization against changing conditions is a cumbersome process. It is merely for stability that we want foreign exchange at par, for only at par with all countries involved on a gold basis, can exchange take care of itself. A stabilization could be arranged through artificial control, but no one is disposed to undertake the job.

"Thus in the formulation of the tariff the particular exchange rates existing do not need to be taken into account. If exchange on a given country is at one-half normal or double normal prices and wage rates in that country as compared with those in the United States are presumably in keeping with the exchange rate that the play of commercial transactions has brought about. For furthering our foreign trade it is stabilization, not a mere return to an average of normal, that is requisite. Broadly speaking, it would be as bad for commerce for an exchange rate to fluctuate violently above and below par as for it to fluctuate violently above and below one-third of par."

Labor, Immigration and the Open Shop

AMERICAN LABOR is the most favored of any in the world. In spite of protestations to the contrary, this fact is universally admitted. Upon this subject the *Washington Post* has the following to say:

"Any legislation intended to safeguard the interests of the United States should include provisions safeguarding American labor. It is proper and necessary that Congress should discriminate in favor of American labor as against all other workers, notwithstanding foreign attempts to 'internationalize' labor. American labor is so much better paid, and has so many superior opportunities, that it cannot afford to pool its interests with foreign labor. The advantages enjoyed by American labor must be safeguarded by legislation whenever necessary. Otherwise the phrase 'America first' would be meaningless as applied to the workers.

"It is literally true, as President-elect Harding has said, that 'the big thing for all America to realize now and always is, the dignity of productive labor. No matter how humble, the producers are the makers of the essentials of civilization and we must each and all of us accept and discharge our duty of producing for the world, or of ministering to the needs or comforts or progress of mankind.' This is the goal toward which intelligent workers and thoughtful employers are headed, for orderly deflation can only come with the cultivation of national thrift and a largely increased industrial output per unit of worker."

THE IMMIGRATION BILL which has been before the House and which was passed by it afforded an opportunity for the expression of opinion of our Congressmen in regard to this important subject. REPRESENTATIVE CAMPBELL of Kansas, on the floor of the House, said:

"In this period of reconstruction we shall not only have to limit immigration, but we shall have to limit by proper taxation the importation of a flood of the products of labor employed elsewhere in the world, in order to maintain our standards of living and our scale of wages in the United States. Just so surely as we open our gates or keep them open to the flood of immigration that is anxious to come to the United States, so surely will our standards of living, our scale of wages be reduced. We have today in this country the highest standard of living in the world and the highest scale of wages in the world. We have the best opportunities in the world. We have been able to serve the world and mankind because of the exceptional standards that we have established and have been able to do much for humanity that no other people could do. We must reconstruct for the welfare of the United States, and in doing so we must preserve everything that is here that is essential for the welfare and for the future of our own people."

MANY SOUND ARGUMENTS have been advanced, pro and con, among which is the following from the *New York Herald*:

"We need immigration, but we need most to discriminate as to the kind and character of immigration we will permit to come here. Right thinking, sound living, willing workers bring strength to the nation; wrong-thinking men—schemers and breeders of unrest—are a curse to the nation and should be denied admittance to this country of ours."

THE MINING CONGRESS JOURNAL has carried in this department much comment upon the question of the open shop. At its annual meeting in Boston, the NATIONAL GRANGE adopted the following resolution:

"The National Grange does hereby express its disapproval of any system which denies to any individual the right to work in any place where his industry is needed at any time and at any wage which is satisfactory to him or to quit his employment whenever and for whatever reason may be to him controlling, subject only to such contract obligation as he may willingly enter into and as may be enforceable in an American court of justice."

CONTRACT REPUDIATION by the labor elements has called forth much comment by the press of the country. The *New York Commercial* has the following to say editorially on "When a contract is not a contract":

"When an honorable business man gives his spoken word it is said to be as good as his bond. A business man's written word is his bond, and presumably it will remain good as long as he has a dollar in the world to back it up. The present deflation has revealed a condition of business conscience that is a sad reflection on the honor and integrity of American business men. Cancellations have been so numerous that it would seem as if a contract is a contract only as long as it shows a profit. When it shows a loss it is merely a scrap of paper.

"In law a contract can be cancelled only by the agreement of both parties or by one party if the other fails to live up to its terms. In many instances cancellations are being accepted by the second party because there is no alternative. It can easily be seen that business houses will suffer to a serious degree if these cancellations are allowed to stand. It will mean that honest buyers, who regard their given word as a sacred obligation, will suffer, while those who regard their obligations lightly will profit, which is a reversal of the theory that only the righteous should prosper.

"The man who takes advantage of a falling market to find fault with goods he would unquestionably accept on a rising market, or who just simply lies down on his contract, should have a black mark placed against him by all reputable business houses."

"Big Business" A Very Popular Target

THE U. S. STEEL CORPORATION is continually a target for those who are opposed to big business. In an interview appearing in the Magazine of Wall Street, ELBERT H. GARY, chairman of the Steel Corporation, said:

"I have no sympathy with the feeling of pessimism which seems to prevail to some extent among business men. This feeling is doubtless the result of the sharp fall of prices in several trades. Prices have in many cases been too high.

"Middlemen, especially, and the smaller manufacturers in some departments of business, have been too ready to pass on to the customer not only their additional costs, but also a large additional profit along with the costs.

"As an illustration of this, my attention was recently called to an article appearing in a well-known weekly publication in which the Steel Corporation was charged with advancing the price of nails from \$3.70 to \$12 per keg during the years 1917, 1918 and 1919, the inference being drawn that this advance was made to cover the estimated federal income taxes of \$559,743,270 for that period. As a matter of fact, the price of nails received by the corporation since 1914 has not exceeded \$3.50 per keg, and since March 21, 1919, after the steel committee of the American Iron & Steel Institute had reached an agreement with the Industrial Board and the Department of Commerce, the price has remained at \$3.25 per keg, although the corporation was under no obligation to continue these prices after the whole matter was abandoned by the government. Quite likely in many cases the middlemen disposed of these nails at exorbitantly high prices, and it may have been in some cases as high as \$12 per keg. In fact, I have been informed that some middlemen after purchasing our nails at \$3.25 per keg, put them into stock at \$5 and \$5.50 per keg, the prices being charged by some of the independents, and then, upon disposing of them to their customers, adding the customary profit.

"Such conditions could not be permanent. Genuine and substantial prosperity must be fair and based on the law of supply and demand. Profits which are not legitimately based on that law are unjust and cannot last.

"The price reductions which have already taken place, are in most cases healthful and will add to our permanent prosperity. In some cases they may have gone too far but if so, there will be a natural rebound."

THIS SAME IDEA IS expressed in an entirely different manner by FRANCIS H. SISSON, vice-president of the Guaranty Trust Company, who says:

"Every man engaged in business recognizes that cost price and value are relative terms. The reward to be paid for given service can be fixed only by taking into consideration other factors. The value of a thing or a service is based upon its cost of production, and the price of it must take into consideration the cost, plus the labor. Ordinary common sense makes it clear that economic progress demands that it must be made profitable for labor to go on producing, profitable for capital to go on furnishing the supplies for labor to use, and profitable for intellect to supply the ideas about which all industry revolves. Business cannot go on at a loss, whether the business be that of an individual worker selling his labor or a manufacturer selling his product, or a farmer disposing of his produce. The moment profit disappears, industry in that particular line also disappears.

"The three partners in industry must work together with some understanding of each other's functions and duties."

MINE RESCUE AND FIRST AID WORK TO BE CONTINUED

Mine rescue and first aid training work will be continued, not to take the place of self-preparedness and self-help, but to promote the organization, encouragement and training of local men and companies to help themselves, Dr. F. G. Cottrell, director of the Bureau of Mines, recently announced. While the main mission of the bureau in this respect is to serve as a teacher and standardizer, that part of its work which deals with investigations of safe and dangerous practices, development, use and approval of underground explosives, ventilation, mechanical and electrical appliances and health and working conditions, Dr. Cottrell said, must grow in proportion to the growth of the industry and the use of more complicated machinery and appliances.

SUSPENSION OF ASSESSMENT WORK FAVORED BY PAYNE

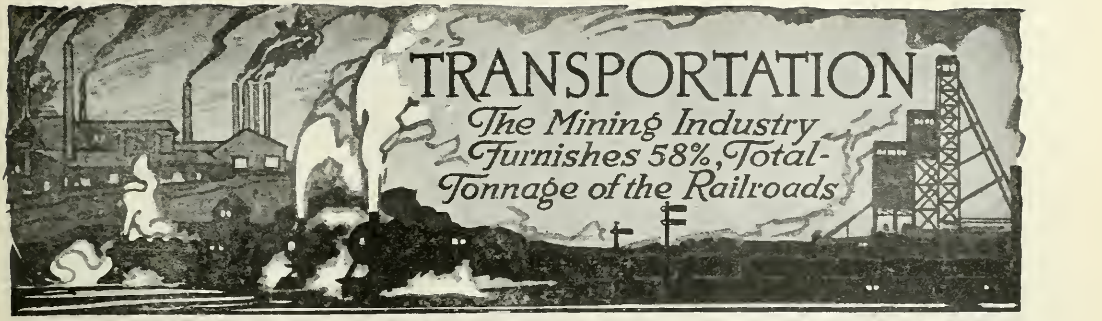
Representative Marion E. Rhodes of Missouri, chairman of the House Committee on Mines and Mining, in reporting to the House the bill to suspend for 1920 the laws requiring assessment work on mining claims, quotes a letter from Secretary of the Interior Payne recommending such legislation. The Secretary writes this legislation is necessary because of the scarcity of labor, high cost of materials and for other reasons. The gold mining industry is in need of relief, as labor is still difficult to obtain, and the high cost of supplies and material renders very difficult the performance of the annual labor required by law for mining claims.

Mr. Rhodes referred to consideration of this matter by the committee last May, when it was hoped exemption from assessment work would not be necessary, but noted that since then "conditions in the mining states have grown worse each day." He said the mining industry was more depressed than at any time in the last fifty years. Copper, lead, zinc, and silver have decreasd in price and they are being mined at a loss. Producers are continuing operation in the interest of the men in the mines, and are facing the necessity of reducing wages and cutting down the force. Gold is being mined at a loss and the production this year will be scarcely more than fifty per cent of the normal production during the last ten years. A similar reduction will be noticed in the production of silver, lead, zinc and copper.

Mr. Rhodes said the committee was informed that owners of claims are in such financial difficulties that they cannot pay the assessment charge and there is a universal demand from all sections of the country for relief.

Lighthouse Service Needs.—The Lighthouse Service requests appropriations for next year aggregating \$17,429,700, an increase of \$10,000,000 over those of the current year. The estimates include the purchase of 50,000 tons of bituminous coal at an increase of \$4 a ton, 9,000 tons of anthracite at an increase of \$2 per ton and 600,000 gallons of kerosene at an increase of three cents per gallon. The following are among the items of construction work recommended: Portsmouth, Va., coal shed, \$24,000; Hawaiian Islands lighthouse, oil house, \$22,050; Florida lighthouse district, oil house, \$2,240; Charleston district, two oil houses at \$8,462; Boston district, oil house, \$4,995; Ketchikan, Alaska, district, coal shed and gasoline house, \$3,166; Great Salt Pond, R. I., oil storage tanks, \$1,300.

Detailed Report on Webster County.—A book by this title, containing 671 pages, seventeen pages of introductory matter, thirty-five half-tones and twenty-four etchings, accompanied by a separate case of topographic and geographic maps, has just been issued by the West Virginia Geological Survey, P. O. Box 848, Morgantown, W. Va. Price, \$3. Webster county contains the northward extension of the New River coal group, as also the Kanawha group and the lower members of the Allegheny series in its northern portion.



By C. H. Farrell.

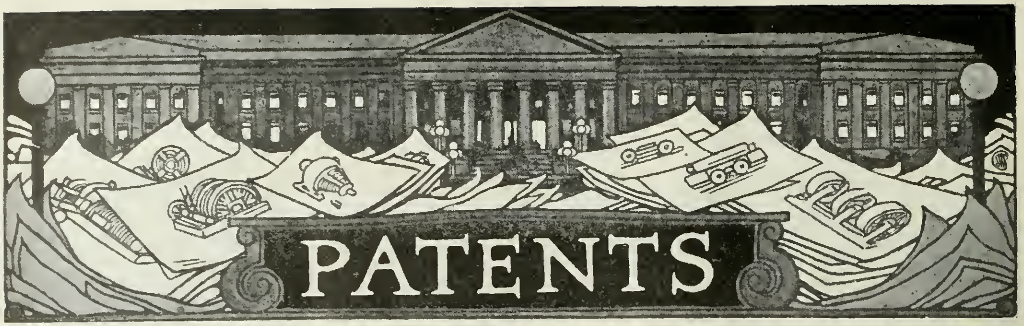
EARNINGS.—The earnings of the carriers for the month of October recently were made public by the Interstate Commerce Commission and show some improvement over the month of September, which did not reflect the advanced rates allowed by the commission this summer to the same extent as the October earnings do because much of the freight which moved in September was billed out during August at the lower rates. In spite of this, however, the net railway operating income for October, which totalled $91,761,090, is approximately $20,674,000, or 18.4 per cent, below the 6 per cent which the carriers were supposed to earn under the new rates allowed by the commission. Taking the valuation of $18,900,000,000 which was used, the operating income for October actually amounted to a return of 4.9 per cent, or about three-quarters of one per cent over that for September. The operating revenues showed an increase of 26 per cent over October, 1919, but the operating expenses increased 28.8 per cent over the same month, leaving an increase in the net income of 20.2 per cent. While the operating income was 18.4 per cent below the amount expected for the entire country, it was 29.7 per cent shy in the eastern district, 16 per cent in the southern district, and 9.2 per cent in the western district. Comparing the eastern district with October of last year we find an increase in operating revenues of 31.8 per cent, in operating expenses of 32.3 per cent and in net operating income of 38.1 per cent; while the southern district shows an increase in operating revenue of 22.1 per cent, in operating expenses of 22.9 per cent and in operating income of 24.9 per cent. In the western district the increase in operating revenue was 21.2 per cent, in operating expenses of 26.9 per cent and in net operating income of 9.5 per cent.

STATE VS. INTERSTATE RATES.—The Interstate Commerce Commission, in addition to the New York and Illinois cases, has handed down a decision in the matter of Wisconsin passenger fares, finding that the rates required by state authority are lower than the corresponding interstate fares and charges authorized by the federal commission and are unduly prejudicial to interstate passengers and unjustly discriminatory against interstate commerce. An order has also been entered requiring the carriers to bring the state rates up to the level of the interstate rates. This is in keeping with the decisions in the Illinois and New York cases and is assumed to be the line of reasoning that will be followed by the commission in all of the numerous state rate investigations now before it. Several of them have been concluded and are before the commission for decision, notable among which are those covering the states of Ohio, Indiana, Michigan, Nebraska, Florida and Utah, which were recently argued, and inferences left by the attorneys for the states indicate that each and every one of these proceedings will be contested as far as possible. Meanwhile, the carriers in Illinois and Wisconsin have obtained preliminary injunctions forbidding the state authorities from interfering with compliance with the commission's order. It is understood that the injunctions against the carriers in New York state will be lifted, and it is probable that that case or the Illinois case will be the first one to reach the Supreme Court of the United States.

GUARANTY TO CARRIERS. — The comptroller of the treasury recently ruled that the amount of the guaranty to which carriers are entitled under the Transportation Act must be decided upon definitely and embodied in one certificate of final payment before the treasury will honor payment. The commission had issued, in some instances, a certificate for partial payment to permit the carriers to obtain money badly needed, but this ruling of the comptroller makes it impossible for the carriers to get any money until the full amount due them is determined. This is a matter of bookkeeping and will take considerable time. Accordingly, for a test case, the Grand Trunk Western Railway Company filed in the supreme court of the District of Columbia a mandamus asking that the Secretary of the Treasury be required to honor a certificate for partial payment issued by the Interstate Commerce Commission. This proceeding has recently been argued and is now before the court for final settlement, it being hoped by the carriers that the Secretary of the Treasury will be required to honor these certificates and that the court will reach this decision on the ground that what the Secretary has to do with the whole matter is merely the performance of a ministerial duty not involving the use of any discretion.

OPERATING CONDITIONS.—The latest figures available show that the number of cars loaded with revenue freight for the week ended November 20 was about 39,000 less than during the preceding week, although it exceeded the same week of 1919 by 26,000 and the same week of 1918 by 23,000. There has been a falling off in the amount of traffic handled by the railroads during November because the month of October was an exceptionally large one and the months of November and December usually show a decline in the movement of traffic.

OPERATING STATISTICS. — During September of 1920 the carriers produced in exclusive freight service 40,651,000,000 net ton miles, which exceeds September of last year by 1,973,000,000 and is 2,000,000,000 less than August. The falling off, as compared with August, is attributed to the rush of shippers to get shipments moving during August while they could take advantage of the old freight rates. The tables indicate that while the volume of traffic increased 5.1 per cent, the freight train-miles increased 6.7 per cent. The loaded car-miles show an actual decrease of .7 per cent, the increase in train-miles being in part explained by an increase of 13.0 per cent in empty car-miles. Because of the increase in empty car-miles, the average train-load shows a decrease of 1.4 per cent, while the car-load increased 6.0 per cent. As indicated, the per cent loaded of total car-miles shows a decrease of 4.0 per cent and the car-miles per car-day increased 6.4 per cent. The net ton-miles per car-day shows an increase of 7.8 per cent. The cost per freight-train-mile of locomotive repairs, enginemen, trainmen, fuel, enginehouse expense and other locomotive and train supplies shows for the total an increase of 31.3 per cent. During the nine months period ended with September, 1920, there were produced by Class I roads in exclusive freight service, 330,964,000,000 net ton-miles, being an increase of 44,062,000,000 net ton-miles, or 15.4 per cent, over the same period of 1919; and over the same period of 1918 the increase is 6,645,000,000 net ton-miles, or 2 per cent. Train-miles increased 14.3 per cent over September of 1919 and the loaded car-miles increased 12.6 per cent. The train-load increased 1 per cent and the car-load increased 2.5 per cent. The per cent loaded of total car-miles increased 2.4 per cent; car-miles per car-day increased 8.1 per cent and the net ton-miles per car-day, the resultant of car-load, per cent of loads and car-miles per car-day, and which is the ultimate measure of freight car utilization, although not necessarily of efficiency, shows an increase of 13.3 per cent. The cost per freight train-mile selected expense accounts referred to in the comparisons for the month shows for the period an increase of 21.6 per cent over the corresponding period of 1919.



Conducted by John Boyle, Jr.

1,355,071—*Charles Allen*, El Paso, Texas.

Thickener and Means for Removing Settled Solids Therefrom, comprising a tank, having an actuating member mevable by variation in density, and discharge means within and adjacent to the tank bottom for the settled solids and controlled by the actuating member.

1,355,414—*E. E. Nida*, Millfield, Ohio.

Coal Cager, for use at the bottom of a mine shaft, one of the objects being to provide automatic means whereby, when a cage is brought to position to receive a car it will automatically operate mechanism for releasing one car of a trip while the remaining car or cars will be held until the cage has moved away, whereupon the next car of the trip will be brought automatically to position to be delivered to the cage when the cage is again returned for a load.

1,355,474—*Harry W. Hardinge*, New York City.

Conical Mill. The well known type for grinding ores in its most common form consists of two cones arranged base to base with a short cylindrical section between the two. The material is delivered into one of the cones and after grinding is discharged from the other. Another form of conical mill is conoidal in shape as in patent No. 1,202,278. In any case, the distinguishing characteristic is the tapering form of the outlet portion. This tapering form causes the material, as the mill is revolved on its longitudinal axis to assume a sort of vertical stratification or classification according to size, the pieces or masses being largest at the greatest diameter of the mill, and decreasing in size progressively towards the apex of the outlet cone as described in patent No. 908,861.

Normally the assorting of the material according to size permits only particles of the desired fineness to issue from the outlet, but if the material is fed at a faster rate it is found that some of it is composed of particles too large for the intended purpose, and in such cases it is necessary to separate the coarse material and return it to the mill. The present invention relates to this separation and return of the coarse material. There is accordingly provided outside of the conical outlet portions of the mill a conical hood into which part or all of the more or less disintegrated material is discharged either through the apex of the outlet portion, or through suitable openings in its wall. This hood is fastened to the outlet portion of the mill in any suitable manner so as to revolve with it. Extending back from the base of the conical or tapering hood, one or more pipes leading to the interior of the mill, preferably at a point in the base of the outlet cone, are provided to return the coarse particles.

1,355,512—*H. S. Shimizu*, Chicago, Ill. Assigned to Roberts & Schaefer Co.

Apparatus for Handling Coal, in which there is a hoisting device and the object among other things is to provide means whereby the hoisting bucket can be simultaneously tilted and moved bodily laterally so as to bring the mouth under the hopper, while the mouth is substantially horizontal during the hoisting operation.

1,356,249—*E. A. Williams* and *A. H. Ward*, Los Angeles, Cal.

Ore Concentrator, including a frame, rakes mounted thereon, impeller blades pivotally and loosely mounted on said frame in front of said rakes, and reciprocating means adapted to swing said impeller blades away from said rakes on the backward motion and against the said blades on the forward motion.

1,356,332—*J. E. Armitstead*, Provo, Utah.

Ore Separator, including an inclined rotatable concentrating tube and a horizontal tube forming a continuation of the lower end of the first-named tube and rotatable therewith.

1,357,126—*Theodore Stretton*, Cardiff, Wales. Assigned to Haslam & Stretton, Ltd.

Electric Cell for Miner's Lamps.

1,357,318—*J. C. French*, Chicago, Ill., November 2, 1920.

Machine for Handling Coal or Other Materials.

1,357,456—*J. E. Jones*, Switchback, W. Va., November 2, 1920.

Coal-Handling Machines, comprising means for conveying the broken down coal from the coal face to a point in the rear of the coal face, of a scoop, drag and haul lines for said scoop, reeling mechanism for pulling said schoop into or out of a gallery, and means permitting the manipulation of said lines so that said scoop returns to the rear of the re-deposited coal by passing to one side thereof and then goes in the opposite direction to attack said re-deposited coal.

1,357,466—*Erwin Moller*, Brackwade, Germany, November 2, 1920. Assigned to The Chemical Foundation.

Separating Suspended Particles from Gases, consisting in subjecting the gas to the action of and ionizing discharge of electricity to charge the suspended particles and then subjecting the charged particles to the action of an electro-static field of progressively increasing strength.

1,357,508—*Mary N. McGregor*, Pasadena, California, November 2, 1920.

Oil Well Fishing Tool, comprising a head and plurality of fingers secured to said head and adapted to be permanently bent around and made to grapple an obstruction in the well.

1,357,510—*Nicola Pevulla*, MacDonaldton, Pa., November 2, 1920.

Hand-Mining Machine.

1,357,556—*D. F. Haley*, Wallis, Idaho, November 2, 1920. Assigned to Metallurgical Company of America.

Process and Apparatus for Oil Flotation, by continuously fluidizing the oil-containing mineral to be separated, continuously injecting a liquid jet through an atmosphere of gas directly and forcibly into a body of the fluidized ore to form a froth and continuously withdrawing the fluidized ore from the body and separating the froth from the remaining fluidized material.

1,357,587—*C. L. Peck*, New York, N. Y., November 2, 1920. Assigned to The Dorr Company.

Method of and Apparatus for Treating Waste Liquors.

1,357,884—*E. McFarland* and *H. T. Lowery*, Aspen, Colo., November 2, 1920.

Concentrator.

1,357,886—*A. F. Meston*, New York, N. Y., November 2, 1920. Assigned to Research Corporation.

Apparatus for Electric Treatment of Gases, the combination of a flue having a perforate and imperforate section, means for producing transversely of said flue a field of electric stress and means for intensifying said field adjacent the perforate section.

1,357,921—*J. Allingham*, Los Angeles, Cal., November 2, 1920. Assigned to Allingham Flotation Machine Co.

FLOTATION MACHINE.

1,358,005—*W. K. Liggett*, Columbus, Ohio, November 9, 1920. Assigned to The Jeffrey Mfg. Co.

CRUSHING MACHINE, comprising a stationary jaw and a movable jaw, a pitman adapted to longitudinal oscillation, a toggle lever between the pitman and the movable jaw, a second toggle lever between the pitman and an abutment, a pendulum upon which said abutment may swing, and tension rods to hold said abutment against the thrust of the toggle levers.

1,358,029—*W. W. Sloane*, Chicago, Ill., November 9, 1920, assigned to Goodman Mfg. Co.

MINE LOCOMOTIVE of the single motor, flexible truck, type of battery locomotive, in which the motor and driving mechanism is lowered, and a wheel base lengthened so that the over-all height of the locomotive including the batteries is reduced to a minimum.

1,358,028—*W. W. Sloane*, Chicago, Ill., November 9, 1920. Assigned to Goodman Mfg. Co.

MINE LOCOMOTIVE.

1,358,175—*E. Ramsey*, Birmingham, Alabama, November 9, 1920.

TIPPLE, adapted for use in connection with the dumping of mine cars raised on a cage or any like hoist or skip car to the tipple and contemplates utilizing reciprocatory rams for shifting the mine cars between the cage and the adjacent rotary dump. The rotary dumps are arranged on each side of the cage and the rams disposed to move an empty car, that has been dumped by one of the rotary dumps onto the cage and forces the loaded car last brought up on the cage into the rotary dump on the opposite side of the cage, the empty car being left on the cage. There is thus effected a double transfer of both empty and loaded cars in one operation, which leaves the cage with an empty car to be lowered, and the dump with a loaded car to be dumped.

1,358,261—*J. S. Strive*, Avalon, Pa., November 9, 1920. Assigned to Pressed Steel Car Co.

ORE CAR of the dumping type in which the sides are provided with outwardly swinging doors; an object is to provide a car which will have the maximum width within the clearance limits and yet permit of the application of the door hinges and hinge butts without increasing the over-all dimensions of the car.

1,358,293—*W. H. Corbould*, Australia.

PROCESS OF CALCINING ORES of copper, consisting in subjecting the finely pulverized ore to heat, and alternately to air under pressure and to a substantial vacuum.

1,358,378—*D. F. Lepley*, Connellsville, Pa., November 9, 1920.

REDUCED SPEED TRIP FOR HOISTS.

1,358,379—*D. F. Lepley*, Connellsville, Pa., November 9, 1920.

BRAKE CONTROL.

1,358,393—*S. F. Rathvon*, Denver, Colorado, November 9, 1920.

APPARATUS FOR REMOVING PARAFINE FROM OIL WELLS, comprising a boiler having a space for heated water and a space for steam whereby the water is kept under pressure, of a vertical pipe connected with the said water space and extending down into the oil well, and a vertical return pipe communicating with the lower end of the first pipe and having an escape opening for the water at its other end.

1,358,678—*O. J. Zook* and *J. C. Marshall*, Butte, Montana, November 9, 1920.

MINE CAR.

1,358,807—*L. Wilkinson*, Sourlake, Tex., November 16, 1920.

PIPE FISHING TOOL.

1,358,984—*N. Pedulla*, MacDonaldton, Pa.

MINING MACHINE.

1,359,105—*R. H. Richards*, Jamaica Plain, Mass., November 16, 1920.

METHOD OF CONCENTRATING ORES by separating the granular material from the colloid material in slimes, which consists in feeding such slime in a relative dilute condition in a shallow stream to a concentrating surface inclined sufficiently to cause the forward movement of the colloids but insufficiently to permit a substantial fall of movement of precipitated granular material.

1,359,126—*A. Stevenson* and *A. Logan*, Glasgow, Scotland, November 16, 1920.

COAL-CUTTING MACHINE, comprising a feeding mechanism, a winding drum serving to receive a haulage rope, a driving shaft, a speed-reducing train between the driving shaft and the drum, said train including a pair of spur gears, a pair of bevel gears, a crank and link, a pawl carrier and pawl, a ratchet wheel rotating with said drum, an adjustable shield for the pawl, whereby the working throw of the lattter may be varied, and means for holding said shield in different working positions.

1,359,162—*A. L. Genter*, Salt Lake City, Utah, November 16, 1920. Assigned one-half to General Engineering Co.

1,359,413—*F. C. Mayer*, Bridgeville, Pa., November 16, 1920.

METAL TIE FOR MINE RAILWAYS.

Lesser Mining Industries.—The Bureau of Mines plans to issue a series of pamphlets on the lesser mining industries. The publications will be chiefly informational and intended to help those actively engaged in the lesser industries.

Revenue Bureau Appointments.—N. T. Johnson of Kentucky has been appointed chairman of the Committee on Appeals and Reviews of the Internal Revenue Bureau to succeed P. S. Talbert, who resigned. R. J. Service has been appointed a member. Both were connected with the bureau at the time the appointments were made.

Surplus Cartridge Case Sale.—The chairman of the Ordnance Salvage Board, War Trade Building, Washington, will receive bids January 5 on 56,250,000 pounds of surplus brass cartridge cases, analyzing 70 per cent copper and 30 per cent zinc. Quantities and locations are as follows: 104,131 pounds, Chicago; 42,017,562 pounds, Philadelphia; 44,944 pounds, Cincinnati; 8,859,904 pounds, New York; 8,829,528 pounds, Rochester; 94,625 pounds, Toledo.

Comparing Treatment Methods.—The Bureau of Mines and the North Carolina Geological and Economic Survey are co-operating in investigation of North Carolina ores. Investigations are being made in North Carolina and in the iron mines of New Jersey to compare methods of treatment.

Operating Conditions Studied.—The Bureau of Mines by request of owners investigates mines with a view to improving operating conditions. Recently the following mines were investigated: Virginia mine of the Gulf States Steel Company in Alabama; the Nevajo Weaver and Heaton mines of the Gallup-American Coal Company of New Mexico, and the Old Ben Coal Corporation of Illinois. In the latter tests were made of dust barriers.

Helium Gas.—The Solicitor of the Navy Department in his annual report recommends passage by Congress of a bill making it unlawful to export helium gas from the United States except on written permission of an authority designated by the President. Violation of the law would subject the offender to one or five years' imprisonment and a $5,000 fine or both. The bill is pending before the House Naval Committee.

Oil Prospecting Permits.—During November 540 oil prospecting permits were reported on by the Geological Survery, making a total since July 1 of 2,741. About 1,000 acres in Wyoming were classified during the month as within producing oil and gas structures under the act of February 25, 1920, bringing the total thus classified under this act to 250,000 acres.

EDWIN E. KLEIN of Pittsburgh, who has been clerk of the House Committee on Mines and Mining during the last two years, will return to commercial life January 1, following the death of Chairman Garland of the committee. He will become sales manager for the Pittsburgh territory of the Holmes Disappearing Bed Company of New York, with offices in the Builders' Exchange, Pittsburgh. Before coming to Washington as clerk of the Mines Committee, Mr. Klein was a travelling auditor.

DR. COTTRELL SUMMARIZES BUREAU OF MINES WORK FOR FISCAL YEAR

In a written statement giving a summary of the numerous activities of the Bureau of Mines for the fiscal year ended June 30, Dr. F. G. Cottrell, director, quotes from his annual report as follows:

During the year the completion and dedication of the magnificent Pittsburgh station and central laboratories of the Bureau of Mines marks an epoch in its growth. For the first time the Bureau of Mines has a suitable home and central headquarters for field and investigative work, and for this reason especially the bureau should be able to begin a period of even greater usefulness to the mining and metallurgical industries.

As regards the different divisions of the bureau, mention should be made of the general satisfaction that the work of the division of mine-rescue cars and stations has given to both the coal and metal mining industries. Unsolicited letters of commendation have been received attesting the skill and knowledge of the personnel and the value of this service in time of mine disaster or fire.

As to the business and commercial organization within the bureau, the operation of the government fuel yards in the District of Columbia has proved its success and money-saving value to the government and demonstrated its help to the work of the bureau by linking up the work on coal and fuel combustion engineering with the business of advising and providing the best fuel for various government departments.

The mining division of the bureau, in addition to its regular work of advising and assisting both the coal and metal mining industries toward better and safer practices, has assisted in the codification and adoption of improved coal mine laws for the state of Utah, and has prepared and is putting into operation coal mine regulations for coal leases on government lands. In addition, new coal mine explosives have been regularly tested and added to the permissible list of the bureau for use in gaseous or dusty mines, tests and demonstrations of better methods of protection against the dangers from coal dust and methane (gas) underground have been made in the experimental mine, and the geophone, an underground listening device developed during the war, has been further perfected and adapted for use in mines.

In metal mining, the outstanding feature has been the investigations of harmful dusts and the need for better ventilation in many of the western metal mines.

Fuel Division.

In the fuel division, co-operative work with outside agencies has enabled the division to make two-fold use of the money appropriated for it, and the results are leading to the saving and the more efficient use of fuel, a saving that exceeds many times the money invested by the bureau. This division also concerns itself with mechanical and electrical machinery and apparatus in and around mines, and has prepared model laws for the use of electricity underground. These laws are a milestone in the progress being made in broadening the use of electricity underground and thereby cutting down mining costs without increasing accident hazards. Further, the development of underground storage-battery locomotives has justified the preparation by the bureau of a schedule of tests. Locomotives that pass these tests by the bureau will be approved by it for use in gaseous mines.

In the division of mineral technology the production of mesothorium as a substitute for radium for certain commercial uses has been accomplished, and researches on the use of special steels have brought decided results that will promote greater use. The progress toward the production of helium on a commercial scale in co-operation with the War and Navy Departments has been marked.

Public interest in the petroleum industry continues unabated, and the continued development of the industry is a marvel. In its work of assisting development and conservation in this industry the bureau has codified leasing and operating regulations for oil and gas lands in the public domain. So-called "peg models" have been completed, and demonstrated to producing companies in the field, and have proved their application in determining the depths to which oil wells should be bored. Through the Secretary of the Interior the bureau has assisted in bringing together natural gas producers, consumers and state commissioners with the hope of being able to conserve and prolong the life of this great natural asset. A continuing work of great practical value has been the study of the prevention of evaporation losses in the production, storage, and distribution of petroleum, which is resulting and will result in the saving of gasoline. Put into general use these methods will save each year millions of gallons of gasoline.

Work of Experiment Stations.

During the year the eight experiment stations distributed throughout the country continued their work on local and general mining and metallurgical problems.

The Alaska station has been of especial aid in helping to solve the variety of problems that arise under the peculiar conditions there.

The principal completed work of the Northwest station at Seattle has been the proving of the feasibility of reclaiming coal from local culm piles and putting this process into commercial use.

The Pacific station at Berkeley, Calif., has solved problems connected with the dead burning of magnesite—an advance that helps to make American magnesite products able to compete successfully with those imported.

In the Southwest station at Tucson, Ariz., marked progress has been made in devising processes for treatment of low grade copper ores heretofore not treated.

The Intermountain station at Salt Lake City has given most of its time to devising processes for the treatment of low grade lead and zinc ores.

At the Golden, Colo., station the radium and molybdenum work has been completed, and there has been prepared for publication a monumental work on methods of analyses and recovery of rare metals.

At the North-central station at Minneapolis there has been a continuing study of the problems of the chemical equilibrium of the blast furnace.

At the Central district station at Urbana a process has been perfected and put into actual practice whereby middle-west low grade coals are being used in certain city water-gas plants instead of the more expensive eastern cokes heretofore used.

At the ceramic station at Columbus the fact has been established that American bond clays can be used with as good effect in the manufacture of crucibles as imported bond clays. Furthermore, a method has been devised for the purification of white-china clays.

At the petroleum station at Bartlesville, Okla., a continuing contact has been established with oil producers and refiners in the many southwest oil fields, and different improvements and suggestions as outlined in the body of this report have been carried out in commercial practice.

At the Pittsburgh station the principal research results have been the determination of the constitution of coal; a discovery of what causes rifle-barrel corrosion and the manner of preventing corrosion, and the continued development of the army gas mask for commercial uses.

Through a co-operation with the New York and New Jersey tunnel commissions complete determination has been made of the amount and character of the poisonous gases given off by automobile exhausts; their effects and dangers in vehicular tunnels established; and remedies have been suggested.

A further accomplishment of the year has been the obtaining of a more complete knowledge of the forms of sulphur in coal and possible lines of attack tried out leading to its elimination.

Co-operative Work Extensive.

During the last few years the bureau has been building up investigative work with outside co-operating agencies in a manner unique among federal bureaus. The detailed agreements entered into differ among themselves, but the fundamentals are these:

1. Some state, or university, private or semi-private organization has problems in mining or metallurgy the solution of which would benefit itself and the public.

2. These outside agencies agree to pay part or all of the cost, both in personnel and materials, of the investigation, which is to be carried on under the direction of and according to the methods of the Bureau of Mines.

3. The Bureau of Mines retains the right to make public and print the results of all such investigations.

So successful has this method of solving problems been that at present the bureau has co-operative agreements with state agencies in eleven states, with twelve different universities and with nineteen private and semi-private agencies. And the total amount of money being spent by the outside agencies on these co-operative agreements, mostly under direction of the bureau, has amounted to approximately half a million dollars during the present fiscal year. In addition, a number of representative concerns in leading mining and metallurgical industries have appropriated money to be spent under the direction of the Bureau of Mines in production of educational motion pictures illustrating various mining and metallurgical industries. The bureau has found that these films are in great demand by the public, and that they have materially assisted the wide dissemination of information concerning the industries.

Finally, the bureau is back to a peace basis, devoting its time wholly to the needs of the industries it serves. Its work must grow and develop in proportion to the value placed on its services by those industries.

SMALL PERCENTAGE OF COAL DISPLACED BY FUEL OIL

Less than one per cent of coal was displaced by fuel oil during the period of low prices of crude oil following the armistice. This is the gist of a recent report by the Geological Survey covering a period from April, 1919, to March, 1920.

In making this investigation the Geological Survey selected representative consumers at random. Questionnaires were sent to 2,347 industrial plants and 317 electric utility plants. Of the utility plants it was found that only nine had changed over from coal to fuel oil. Of the industrial plants it was found that 69 had substituted fuel oil for coal. In each instance it was found that the coal consumption of those plants which had turned to fuel oil represented only one per cent of the consumption of all plants to which questionnaires were sent.

NEBEKER SUCCEEDS AMES

Frank K. Nebeker, assistant attorney general, has been appointed to succeed C. B. Ames, assistant attorney general in charge of anti-trust and interstate commerce lawsuits. Heretofore Mr. Nebeker has been in charge of litigation concerning oil and other land matters and also cases involving prosecution of the I. W. W. Leslie C. Garnett of Virginia has been appointed assistant attorney general to take over the work relinquished by Mr. Nebeker.

BUREAU TO TEST OIL HEATERS

Announcement has been made that the Bureau of Mines will investigate the various oil burning heaters designed for household use, to determine their suitability for this work.

CARNEGIE INSTITUTE BUILDS COMPLETE MINES LABORATORY

The Carnegie Institute of Technology, Pittsburgh, is completing what is said to be the most elaborate coal mining laboratory in the United States. The equipment comprises a full-sized hypothetical coal mine, a mine locomotive, and all mining machinery actually used, as well as an ore-dressing and coal-washing plant.

ANTHRACITE WAGES HIGHEST

According to calculations of the U. S. Bureau of Labor Statistics, contract miners as a result of the recent anthracite wage award are making more money than blacksmiths in manufacturing shops situated in fifteen out of seventeen cities, more than boilermakers in twenty-six out of thirty cities, more than electrotype finishers in twenty-five out of thirty-two cities, and more than book and job compositors in forty cities. The government tables are based on actual hourly earnings in twenty-two representative collieries.

According to the tabulated figures, anthracite employees taken as a whole, including boys, are now getting 138.6 per cent more than they did in the period 1912-1914. Hourly earnings are now 114.5 per cent above the basis established in 1916, and are 17.4 per cent above last year's rates. The miners are now asking that additional increases of 13 per cent on contract rates and 14 per cent on consideration rates be given together with $6 as the minimum for adult day labor.

According to these figures, day men inside and outside who were getting from $1.50 to $3.00 per day of nine hours in 1912-1916 are now getting from $4.20 to $5.96 for eight hours.

Boys who got from 90 cents to $1.40 per day of nine hours are now getting from $2.45 to $2.96 for eight hours.

Inside workers as a whole are now receiving on an hourly basis 132.8 per cent more than in pre-war times, 111 per cent more than in 1916 and 17.1 per cent more than last year.

Outside workers as a whole, exclusive of breaker employees, are getting 167.5 per cent more than in the pre-war period, 132.9 per cent more than in 1916, and 18.4 per cent more than last year.

Breaker employees, mostly boys, are getting 170.5 per cent more than in pre-war years, 132.9 per cent more than in 1916, and 15.8 per cent more than last year.

The contract miner, whose hourly earnings averaged 42.5 cents under the agreement in force when the European war began, averages 99.2 cents per hour under the new schedule.

This average of 99.2 cents, as given by the government, is interesting as compared with wage scales for skilled trades also reported by the government in the same issue of the Monthly Labor Review, pages 699-716.

According to the government the contract miner is averaging more per hour than do the blacksmiths in manufacturing shops situated in fifteen out of the seventeen cities for which figures are given. In these fifteen cities blacksmiths' wages run from 75 cents to 90 cents.

The contract miner averages a higher hourly rate than do boiler makers in twenty-six out of thirty cities covered. Boiler makers in Philadelphia manufacturing and jobbing shops get from 80 cents to 90 cents.

Book and job compositors—not linotype operators—in forty cities, according to the government, do not get as much per hour as the contract miner. The government finds the rate in Philadelphia for this work to be 93.8 cents for book and job work and 81.3 cents for newspaper compositors on day work.

In twenty-five out of thirty-two cities electrotype finishers and molders get less than does the contract miner.

Wages of machinists in thirty-five cities have been compiled by the government. In only four cities do skilled machinists get more than does the contract miner and in three cases they get but eight-tenths of a cent per hour more. In Philadelphia this class of machinists will average 80 cents, the Bureau of Labor Statistics finds.

Out of thirty-four cities there are but three in which molders get as much as or more than the contract miner. In Pittsburgh, home of the iron industry, iron molders get 93.8 cents per hour.

FUNDS CANNOT BE DIVERTED

The Comptroller of the Treasury has ruled that an appropriation made by Congress for a specific purpose cannot be used for any other purpose. The question came up on a request of the Civil Service Commission for the assignment to its work of one or more employees of the Denver mint. The commission made the alternative request that an employee or employees whose salaries are now covered by an appropriation for "wages of workmen" be made available for its use as district secretary. The commission desires to establish a new Denver district for which Congress has made no appropriation, the intention being to ask an appropriation at the next session.

Referring to the primary request for assignment of an employee of the Denver mint, the Comptroller of the Treasury in vetoing the request said: "The appropriation is for the uses of the mint, and if it could be applied to the purposes of the Civil Service Commission, it would make unnecessary having appropriations separately for the separate branches of the government service." He said he knew of no authority for detailing an employee of the mint to the service of the Civil Service Commission.

NEW OXYGEN APPARATUS

It is understood that George F. McCaa of the Pittsburgh laboratories of the Bureau of Mines has developed the last word in oxygen breathing apparatus. It will weigh less than twenty-nine pounds, thereby improving on the weight of the much talked of new British development. The work on this apparatus has been in progress ever since the Gibbs apparatus was brought out. The new apparatus is said to possess many advantages over the present standard apparatus.

MINES BUREAU TO ISSUE BULLETIN ON RARE METALS

The Bureau of Mines is preparing a bulletin on the analysis and determination of rare metals, including tungsten, vanadium, molybdenum, uranium, cerium, zirconium, titanium, radium and mesothorium. Ore dressing and flotation problems will be taken up in connection with the work on rare metals.

POWER PERMITS SOUGHT BY WESTERN MINING COMPANY

The Amazon Mining Company of Wallace, Idaho, has requested the Federal Power Commission to license the construction of a transmission line over the Lolo Forest, Missoula County, Montana, for mining operations.

Mining and Petroleum Digest

SILVER PRODUCER FORTUNATE

WHILE IN MANY INDUSTRIES the return of low operating costs will be contemporaneous with the return of lower prices for mine products, and therefore not such an unmixed blessing as might be desired, in the case of silver it will be altogether otherwise. For whenever the price of silver drops below $1 an ounce, at least for a few years to come, the Pittman Act will operate automatically to lift it back. All of which inspires Herbert A. Hultman, writing in the *Morning Telegraph*, New York, to observe:

"Silver producers are welcoming the drop in price of mining costs more than any other industry, with the possible exception of the gold miners, for the simple reason that they are being offered $1 per ounce until such time that the government believes its requirements, under the Pittman Act, have been fulfilled.

"This would mean that should the operating costs show an appreciable drop, such as is taking place in many manufacturing industries, then the silver producers would be in a better position financially. The demand for silver from other countries has taken a large fall during the present year, but in place of this, the producers have been supported by their good friend Uncle Sam. The length of time it will take to produce sufficient metal to meet this demand puts the industry in a most favorable position for nearly three years yet to come. The attractiveness of silver producing companies whose stocks are traded in seems general.

"After the government has taken its supply of the metal many are asking where will the future demand come from. This outside demand will increase by that time, and, although there is much talk about putting the silver-using countries on a gold basis, the steps along these lines will be a slow undertaking."

But, as is well known, even the Pittman Act falls far short of converting the world into a silver producer's paradise. The *American Mine Reporter*, San Francisco, believes that large financial interests in both America and Europe have kept silver quotations on an artificially low plane and makes the following suggestions:

"The same old organized interests—powerful because of their strong, far-reaching organization—continue to control the silver market, and the silver brokers and the smelters. The producers are bound hand and foot, body and soul, and are only saved from an actual crisis today by the provisions of the 'Pittman' law which enables the American producers to sell their product at $1 an ounce.

"The annual demand of the world for silver for money and for use in the arts is several times greater than the annual production of the world, and the producers of silver should be able to command a logical price, at around at least $1.30 per ounce, as well as the producers of other commodities should be able to establish an artificial and absolutely 'profiteering' value through 'organization.'

"As the annual production of silver in the United States is now estimated at only approximately 52,000,000 ounces, it would not require an impossible number of millions of dollars to underwrite the entire annual production of the United States and withhold it from the market, until the logical price that silver is entitled to command is reestablished and can be maintained.

"The silver situation has truly been cloudy and dark for a long time, with only a few spasmodic rays of sunshine to relieve the monotony. This could all be changed if the silver producers will rouse themselves to the occasion, which is large, indeed, and show the power that is lying dormant within their own hands.

"It may be possible that the time-honored law of 'supply and demand' will some day work out a satisfactory solution of the problem, but the sunshine can certainly be made to penetrate the clouds and darkness by pitting 'brains and organization' against 'organization and brains,' especially when the cause is supported by righteousness and merit. It is time to force the issue."

ALABAMA GRAPHITE INDUSTRY

DESTRUCTION OF THE ALABAMA graphite industry is asserted, and the cause attributed to lack of tariff protection, by William W. Ladd, of Ashland, Ala., writing in the *Manufacturers' Record*, Baltimore. Mr. Ladd, who gives the history of the Alabama industry from its very recent beginning, points out the apparent injustice of withholding from one business a protection which is given to others, saying:

"Ceylon and Madagascar graphite has proved the downfall of the Alabama product. They are able to put their graphite in New York cheaper than the Alabama refiner can do so. The reason for this is that the Alabama man has to mill his ore, while the Ceylon man does not. He employs women and children at a few cents a day to sort the stuff. During the war, when the Ceylon stuff was not available, Alabama concerns flourished, but now the market is flooded by the cheaper Ceylon product. And what hurts is that government experts have declared that the home stuff is equal, if not superior, to that produced in the foreign field. It is probable that with full development the Alabama concerns could supply the country. And now $3,000,000 are waiting for the tariff to be placed on foreign graphite before they can make a return.

"The Alabama graphite man asks only for a fair chance, and the country owes it to him.

"The first effort made to mine graphite in the state of Alabama was some 20 years ago, when an Italian restaurant man from Birmingham came to the Ashland district and erected a five-stamp mill. Out of this man Gillardoni's little, impracticable stamp mill has grown the graphite industry of Alabama.

"In course of time the Allen property was opened up near Gillardoni and became the largest producer of flake graphite in the state.

"Later the Allen was merged with the Quenelda, which, eight days after work was completed on the mill, burned and had to be rebuilt. With the development of the Quenelda came experienced men from Pennsylvania and the construction of the Reading plant, now shut down and decaying, a monument to the pioneers in Alabama graphite work.

"Next came the Alabama Graphite Co. It was financed by local men and operated by a northern miner. For several years the Alabama and the Quenelda dominated the Alabama field.

"Graphite is now mined extensively in Clay, Coosa and Chilton counties.

"Chemically, graphite is pure carbon; however, the No. 1 flake usually runs about 92 per cent carbon, the balance being sand and other impurities.

"Everywhere throughout the graphite district development has kept pace with the market. As the manufacturers of crucibles began to recognize the Alabama product and new uses were found for it all the time, new mines were opened up and improvements made in the older plants, so that they could take care of more stuff. The industry began to get on its feet.

"Then came the war. Prices for No. 1 flake jumped from 6 cents to 17, 18 and 20 cents. The demand doubled, and with the enhancing price men from every walk of life invested in Alabama graphite property. It is no exaggeration to say that $2,000,000 were spent in Clay, Coosa and Chilton counties in two years. The graphite industry reached what might be termed the boom stage. Plants were built that cost their owners small fortunes. There are in view on one road alone leading from Ashland, in the distance of eight miles, 17 different plants. The business reached such an important stage that the Alabama Power Co. brought its hydro-electric power from the Coosa River and supplied almost every plant in the district.

Then came the end of the war and the fall of graphite prices. Cost of machinery advanced by leaps and bounds, and labor more than doubled. The market fell flat. Graphite dropped to 8 and 9 cents. Mills found that they could not make both ends meet under the existing conditions, and there was but one alternative. This they accepted; they shut down.

"The use of graphite in industry is still in its infancy. Few people know any of the uses beyond that of making lead pencils. Some of the more common are the making of crucibles, the making of paint, lead pencils, lubricants, foundry facings and some of the poorer grades for stove and shoe polish, and the list is growing longer every day.

"The story of Alabama graphite runs parallel with other young industries through the experimental stage, but it differs from them in this: that while others have been protected from foreign competition by tariffs, the Alabama graphite men have been left out to succumb to the invasion of the outside product. When there is a protective tariff levied against imported graphite and the Alabama man can once more make a fair return on his money, then will the graphite business wake up."

WORLD'S SILVER PRODUCTION

THE *American Metal Market* and *Daily Iron and Steel Report* prints the following:

"The world's production of silver in 1920, according to an estimate submitted to the International Financial Congress at Brussels, will fall short of the pre-war rate of production by fully 29,000,000 ounces, if not more. The estimate places the 1920 probable output at 195,000,000 ounces. In 1913 the amount produced was 223,900,000 ounces.

"These figures are from an official memorandum on silver prepared for the conference, a copy of which has been obtained by the Bankers' Trust Company of New York. In view of the fact that previous reduced production has been largely responsible for the present high price of silver, the forecast of a subnormal output during the current year possesses unusual interest and significance.

"G. Findlay Shirras, director of statistics to the government of India, who prepared the memorandum for the conference, holds that uncertainty which prevailed regarding the purchase in the United States of silver at $1 per ounce under the Pittman Act, and the falling off in China's demand may result in even a lower production than 195,000,000 ounces during the present year.

"According to his statistics Mexico alone of the world's silver-producing countries equalled in 1919 the pre-war rate of output.

"The following are his figures:

	In thousands of fine ounces 1913	1919	Decrease or Increase
Mexico	70,704	75,000	+ 4,296
United States . . .	66,801	55,285	—11,516
Canada	31,525	15,675	—15,850
Other countries ...	54,787	49,040	— 5,838
	223,908	195,000	—28,908

PUBLICITY FOR THE INDUSTRY

IN LINE WITH THE SUGGESTION made in the November MINING CONGRESS JOURNAL that greater publicity be given the mining industry, and that every mine operator make it his personal business to see that this publicity is forthcoming, is the following from the Denver *Daily Mining and Financial Record*:

"Now that the election is over we can all get down to work again. The newspapers have been filled with political news and advertising which has crowded out other important matter. The mining camp newspaper reflects the activity in the mines of the camp where the newspaper is published. Now let us have more mining news, so that the nation will again be made to realize how important the mining industry is to the prosperity of the nation. With politics out of the way, editors can devote more time to the needs of their particular sections and in this way call the attention of capital to the opportunities for profitable investment in the camp's undeveloped resources.

"An idle mining property in a camp is a poor advertisement, and if the camp newspaper will devote a little space to telling of the possibilities of this property, idle capital will seek it out and put it on the active list. There should be an active organization in every camp to adopt ways and means of advancing the interests of legitimate mining in these camps and to assist the editors in giving proper publicity to the mining interests. Why not arrange for a publicity fund to help the local newspaper properly to present the facts so that capital will know where there are opportunities for investment? A newspaper has wings and gains entrance often where an individual may find the capitalist in 'conference.'"

That the same view is shared by the business men of Reno, Nev., is evidenced by the action of the Reno Chamber of Commerce in listing mineral projects and prospects and supplying information to investors. The chamber has established what amounts to a mining bureau and is prepared to further in every way the state's resources, especially in rare metals, whose riches have to a great extent been passed by in the rush for gold and silver. The *Salt Lake City News*, under a Reno date line, describes what is being done in the hustling Nevada city:

"Listing of all mining projects and mineral prospects in Nevada, also all inquiries for various metals, has been started by the Reno chamber of commerce. The new bureau promises to become an invaluable asset to mining men and prospectors throughout the state, for it will provide them with detailed information regarding markets for their products, particularly rare metals.

"The bureau is being established by the chamber of commerce, according to Secretary Kimmel, because of the large number of inquiries received from purchasers of metals. More inquiries have been received in the last few months than ever before, practically all the inquiries being for little known metals. The present demand for rare metals has increased interest in prospecting throughout the state. Heretofore these metals have largely been overlooked in the search for gold and silver ore. Deposits of rare metals are being discovered with regularity at the present time and the chamber of commerce offers the service of its mining bureau to locators to facilitate them in finding buyers for their claims or their products."

A RICH MAN'S GAME?

WHETHER A BARREL OF MONEY, or merely a peck or some smaller measure of the same is required for successful operation of an oil shale plant even of limited capacity is a question which has been not infrequently debated. The *Shale Review*, Denver, intervenes to make the point that the oil shale industry is not any more of a rich man's game than the oil business, in any event. We read:

"Many articles on oil shale which have been printed in recent years lose much of their effect by reason of statements of enormous amounts which it is claimed must be in hand before any company can undertake shale development. These articles commonly speak of the oil shale industry as 'a rich man's game.' One million dollars is fixed as the minimum amount necessary to be available before the treatment of shales and the production of oil can be undertaken. It happens that most of the writers who make these broad statements fail to deal in specific figures, and it would seem that some answer must be made to these extravagant statements.

"In the first place, there are very few businesses at the present time which are not a 'rich man's game,' and nothing requires so much capital as the production, refining and marketing of petroleum. The richest corporations in the United States are the oil companies. The Standard Oil Company of New Jersey was considered to be such a menace to business that Congress enacted a law which compelled this corporation to dissolve itself into numerous units. If any business in the world is a rich man's game, it certainly is the oil business. Let us see if the shale industry comes anywhere near approaching the oil business, as we now know it, in capital requirements. An oil well cannot be drilled anywhere in the United States to a depth of 3,000 feet for less than $25,000, and thousands of wells, many of them barren, have been drilled to this depth which have cost $100,000. In drilling an oil well the operator engages in a very hazardous undertaking. Even in proven fields he does not know whether he will obtain production or not. He stakes fortunes in the hope that his enterprise will be successful. In the production of oil from shale all the risks of discovery are eliminated. When an individual or corporation proposes to embark in the treatment of shale the volume and richness of the crude product is known indefinitely. The cost of the plant can be determined to a cent before any money is expended. Shale retorts have been built in the United States which can produce from fifty to one hundred barrels of oil daily that have cost less than one-half the average expenditure for deep holes, even in proven wells. One concern in Denver offers to build a shale retort, whose operation will be guaranteed, for $15,000. This retort will produce fifty barrels of oil daily, and if the shale bodies are accessible and the mining conditions favorable this retort can make oil for $1.50 a barrel and continue to make it for many years. This is not an enormous sum and is very much less than the million dollars which some writers insist must be in hand before shale can be treated profitably. There are very few business enterprises which can be undertaken for such a modest sum of money. The oil shale industry may not be a 'poor man's game,' but it is much nearer a poor man's game than drilling oil wells and many other forms of business enterprise."

COMMENT ON MINING CONGRESS WORK

THE *Denver Mining Journal* prints the following:

"It took a lot of development work to make the AMERICAN MINING CONGRESS the powerful organization it is today. Back a quarter of a century ago, about the time of its organization, it took a lot of nourishment to keep it alive and much credit is due to those old-timers who with their time and money helped to build this splendid organization up to its present strong position. It was pretty much of a prospect affair during the first few years of its existence, but it has been developed into a big producer of good for the entire mining industry. The organizers of the AMERICAN MINING CONGRESS staked their claims on a pay lead and today the AMERICAN MINING CONGRESS has been dedeveloped into a bonanza.

"Considering the magnitude of the industry and the immense wealth being produced daily from the thousands of shafts, tunnels and oil wells, it is vital that this great industry have a champion to fight for its interests. The AMERICAN MINING CONGRESS is a fighting organization, as demonstrated by the battles won by it through its Washington headquarters. It is not necessary to point out to mining men the needs of the gold producer, the tungsten shipper or the zinc operator. The officers of the AMERICAN MINING CONGRESS know what is needed and are making the proper fight down in Washington to bring greater prosperity to the mining west. Not only every mining man and oil operator, but every business man in the Rocky Mountain country should put his shoulder to the wheel and give united support to this work. Prosperity for the mining industry means prosperity for the nation, and the work of the AMERICAN MINING CONGRESS will help to make this prosperity permanent."

FROM COAL DIGGER TO PROFESSOR

FROM A COAL DIGGER in the mountains of Tennessee and Kentucky to a professorship of educational psychology in Columbia University within ten years is the record of Dr. William A. McCall. The rise of this one young man shows, more pointedly than any amount of argumentation, that opportunity is open to the mine workman just as it is to the occupant of a lowly place in any other activity. The following interesting account of Dr. McCall's experiences is taken from the Ogden, Utah, *Examiner:*

"At the age of 29 Dr. McCall has not only the distinction of being a member of the Columbia faculty but has won a considerable reputation as a lecturer in experiments in educational psychology. He also is the author of a book on educational measurements that represents pioneer research work in educational psychology.

"William A. McCall was born at Wellsville, Tenn., January 9, 1891. The first seven years of his life were spent on a farm, but thereafter, until he was 13, he was in the coal mines of Red Ash, Ky. One winter the family lived in a one-room log house. William worked with his father in the mines part of the time and spent the rest of his time as a trapper at fifty or sixty cents a day. His father's roving spirit kept the family on the move. From Red Ash they went to Woolridge, then to the Indian Mountain mines, to a country home near Jellico, and then back to Red Ash, embracing in all about two years. William attended various schools for brief periods as opportunity arose, but for the most part worked in the mines. His mother died in 1904. His younger brother, the only other one living in a family of four, went to live with another near Wellsville.

"A few months later William was among strangers at Red Ash. He obtained a place with a mine foreman, went to school and paid his board by doing chores. A year later his father married again, and the family was united once more at Red Ash. William then went to Williamsburg Institute for nearly a year. Poor health prevented continuation of his work there. A few months later the family moved to a place near Pineville, Ky.

"Entering Highland College in 1906, he paid his way through the year by doing janitor work. In the summer of 1907 he earned enough by digging coal to return to Highland, which that year was merged with Williamsburg Institute. He was graduated from the united schools in 1911 with a B. S. degree.

"Up to this time he had been president of the Y. M. C. A. and literary society, a winner of a debater's medal, the editor in chief of the college magazine, a member of the tennis team and valedictorian of the senior class.

"In the fall of 1911 he entered Lincoln Memorial University as an instructor in psychology and held this post two years. For the advanced study which he did in addition to his work as teacher he received the bachelor of arts degree.

"This relation with Lincoln Memorial and his old teacher, Dr. George A. Hubbell, brought him in touch with Columbia University."

A WESTERN INTERIOR SECRETARY

ONE DISTINCTLY DISCERNIBLE NOTE in all comment respecting the make-up of the Harding cabinet is that the west should be accorded the portfolio of the Interior. Editorial expression is almost unanimous that political expediency should not even be considered in the selection of the new Secretary of the Interior. The *Mohave County Miner* (Kingman, Ariz.), discourses as follows upon the desirability of a western man for the post:

"Geographically and from the standpoint of developing natural resources the west is entitled to the portfolio of the Interior.

"Secretary Lane of the Wilson cabinet came from California and was always a champion of progressive policies in western matters.

"Subtle influences are at work to prevent the west from getting this place to which it is clearly entitled and switch it to the east.

"Most of these influences are reactionary and represent what is left of conservation policies that would tie up the west for the future.

"In the case of Alaska red tape and dilatory department methods have kept American enterprise out of that territory and population declines.

"The west should not be deprived of the position of Secretary of the Interior and it should be filled by an efficient western statesman.

"Congressman Mondell of Wyoming, Senator Fall of New Mexico, Governor Campbell of Arizona and Herbert Hoover are the type of men needed.

"We do not want our hydro-electric powers, reclamation, irrigation and forest, mineral and oil resources tied up forever."

ZINC MINE NEAR NEW YORK

That one of the finest zinc mines in the world is situated very close to New York City is not generally known, hence the New York *Post* takes occasion to point out the fact:

"At Franklin, N. J., which is only about sixty miles from New York City there is one of the finest zinc mines in the world. It is noted among the metallurgists of America and other countries as the producer of ore that contains no cadmium or other deleterious components, and that produces, when refined, a finished zinc of singular purity.

"This mine has been worked for at least seventy years, and there is an indefinite quantity of ore there. It contains the only zinc deposits of any consequence in the eastern United States."

THE INDUSTRIAL OUTLOOK

NOW, MORE SO than at any time preceding the war, the industrial outlook is the main thought in the public mind. Deflation of the currency, the so-called "consumers' strike," wage reductions, shrinkage of values, over production and under production—these and all other factors of moment to the economic well-being of the country are receiving an unwonted share of attention from the best writers and thinkers. And while there are some who take a gloomy view of the situation, the general run of opinion is that things are moving along satisfactorily. Conservatism, sane thinking, are counselled, and "sit steady in the boat" has become a most popular phrase. A typical article is found in *Saward's*, which, while dealing primarily with coal, is nevertheless applicable to the general situation:

"Briefly, it is a time to keep one's head. The larger interests are doing so, as they did when prices were on the upgrade. They refused to be stampeded by the demand for more tonnage than could be supplied at the moment, and now they, with equal propriety, refuse to be stampeded by the demand for low prices. The reason is quite plain. The 'lack of demand' stories easily run to excess, for we all know that there is more than a million and a half tons of soft coal alone being used up every day in the week, including Sundays; and there will be that much used in any event, whatever the weather or whatever the state of business may be. The tonnage required is great beyond the dreams of coal shippers no further back than the opening of the present century and the permanent demand for fuel the year round is such that no one need be apprehensive that a radical change has developed. Consequently it is but fit and proper to assume an early increase in demand following even a slightly protracted period of no buying or light shipments."

"There is no lack of confidence," is the cheerful conclusion of a *Wall Street Journal* editorial on "Pessimistic Optimism," in which the comparative unimportance of business failures is pointed out and the need for a complete readjustment of prices to the ultimate consumer is noted. This writer says, in part:

"An important business man of the Southwest told the *Wall Street Journal* that he was 'pessimistically optimistic' on the business situation. He cold not shut his eyes to the present stagnation and unemployment, but that was the extent of his pessimism. Beyond all this he saw stocks of essential goods rapidly diminishing, a growing efficiency in labor, transport congestion cleared away, an abundant supply of food and, behind it all, a banking system that has successfully carried the country past the peak of a severe credit strain. Fundamental conditions were sound, and therefore he was basically optimistic.

"This is the opinion of a man who, as vice-president of a great commercial organization, is necessarily acquainted with conditions in every state in the Union. His opinion, however, is not different from that of leading bankers of New York and elsewhere. They regard the present slowing down of business as an inevitable result of belated readjustment from war conditions, and have no fear of the future. They feel that the worst is over, but, not being prophets, do not wish to say when the change for the better will come.

"One thing at least is certain—production of essential goods is materially shrinking. Total output is probably cut 50 per cent. It is true that people are not buying as much as formerly, but there are some goods they must buy; stocks are being depleted and demand is accumulating. A revival of buying must in time take place. Let it be hoped that this will come gradually, for if it came all at once the reaction in prices would be too quick and sharp for the good of the consumer.

"Resumption of buying is, of course, necessary to revive business and give employment. The whole situation now seems to be one of prices. These are not yet adjusted to a relative value. Deflation has worked faster and gone further with the farmers than any other class. Probably $1,000,000,000 has been cut off from their income through decline in prices. They will not buy as freely as before until other commodities come to a relative value with the things they have to sell, until a bushel of wheat or a bale of cotton buys as much of other commodities as formerly. The public in general is suspicious of all prices and stands aside when reduction sales are offered. It compares prices with cost of basic raw materials, and refuses to buy. Its attitude shows the necessity for a readjustment in costs of production."

"Everybody's doing it," is the terse comment made by *Petroleum Age* on the cutting of prices. "The dropping of prices now prevalent in the United States is not a local phenomenon," this publication asserts. "A similar collapsing of inflation is on about everywhere. Australia and Japan are getting a financial back-sliding, even as are America, Canada and Cuba. Europe has been at it for quite a while."

An identical view is taken by the *American Metal Market*, which says:

"The liquidation in commodity prices in the United States is quite apparent to everyone, but stress should be laid upon the fact that liquidation is practically universal throughout the world. It is not a phenomenon peculiar to the United States. It was inevitable that there should be liquidation, as too many people were endeavoring to get returns, whether in wages or in profits, that the economics of the situation would not afford.

"In some quarters there is a notion that this is merely a wave of sentiment, a sort of buyers' panic, and that therefore it will 'blow over' and the old course will be resumed. This looks like a very near-sighted view to take. Which is normal, reasonable wages and moderate profits, or what we have had in the past year and a half? Presumably everybody will admit that we are going to get on a normal basis, and if so the question is simply what a normal basis is.

"Of course, it is a question of degree. The principle that when this 'wave' is over there will be advances in prices is perfectly sound. The pendulum of business always swings too far, and prices always advance too far and recede too far. When price declines cease there will be a tendency of prices to advance, and it is just a question of degree, whether they will go back to where they were early this year, or merely swing back a trifle. There is Bradstreet's index number, for instance. Its high point was on February 1, 1920, 20.8690. During last month it declined from 15.6750 to 13.6263, showing easily the largest monthly decline thus far. That number will go still lower. Assume for argument that it goes down to 12.0000, which would be 40 per cent above its ten-year pre-war average, 1904 to 1913 inclusive, and then reacts. Will it go up to 13 or 14 or 15 or will it go clear back to 20, its record high?

"For a substantial reaction eventually towards higher prices those mentioned who appear to think there will be a return of extremely high prices no doubt base their opinions consciously or unconsciously, upon the tendency we in the United States have of overdoing things. If so, the fact that the liquidation is not confined to the United States but is worldwide is very important. In putting up prices this last time, we had much company, but in a future movement we should not have so much company."

OIL

"LET'S SIT STEADY," is the advice given by *Petroleum Age* after listening to all that has been said and considering all that has been done about the country's oil supply. Without taking the definite position that there has been no scarcity, or that there will be none in the future, this writer very frankly says the element of bunk has played no little part in the discussion which has been raging, particularly anent the gasoline situation. The article makes interesting reading and is reproduced in toto:

"For nearly a year, with almost all of the loudest talkers, busiest writers and speediest printers declaring that an oil famine was at hand, that gasoline would be skyward by midsummer, 1920, that rationing was at hand and everything wrong, *Petroleum Age* preached calm. It said we'd get through—that there'd be oil.

"It pleaded for optimism. It said that too much of this talk might hit the automobile a wallop that would be reflected in the petroleum industry. It intimated that this sort of publicity very easily could be costly to the industry.

"Look at the auto industry now. Look at the oil production now. Readers may go back over the files, if they wish, to check up the warnings then issued.

"And at this time, when a new sort of hysteria is looming, a hysteria that predicts too much oil, smashing prices, woe and many things, we again preach optimism. Like the famine of last summer—our trouble mostly isn't coming.

"Motor users are soon going to realize that they were bunked by the no-gasoline yarns. They'll start to buying better. The oil men who are now fussed up and excited will recall that there is a vast amount of depleted storage to be filled. Prices, very likely, will fall somewhat in sympathy with other prices.

"But—everything that oil companies spend money for will be cheaper, too. So what's all this tummy-aching about, anyway. Let's sit steady, everybody, and cut out the hysteria."

COPPER AS AN INDUSTRIAL BAROMETER

SO FAR AS the United States is concerned, copper is a better industrial barometer than is either steel or coal, according to Charles C. Cowper, writing for *The Street*, New York. The following is an excerpt from Mr. Cowper's most interesting observations:

"Thirty or forty years ago when the rapidity at which we extended our rail facilities indicated the speed at which we were opening up natural resources, steel consumption was the best indicator of the nation's industrial condition. Now, with the main network of our rail systems completed, the major portion of our iron and steel output is for meeting wear-and-tear requirements. Consequently steel, although still an excellent indicator of certain phases of our industrial activity, is no longer the sensitive pilot or advance indicator of what is about to take place industrially. Otherwise steel prices would not be still twice pre-war levels and steel output relatively good.

"Today the true indicator of fundamental business conditions in the United States is domestic consumption of copper, for today the United States is in the forefront of an industrial development based primarily upon electricity, and the great essential in electricity, other than motive power, is copper.

"Copper is not a perfect indicator, for normally only about 45 per cent of our domestic consumption is for making wire. Another 40 per cent is used in brass-making, while the remaining 15 per cent covers sheet copper, tube copper, copper sulphate, copper oxide and other uses. It must be remembered in addition that normally approximately half the copper refined in the United States is sent abroad.

"Fortunately most of the brass goes into machinery and permanent construction connected, indirectly at least, with exploitation of our natural wealth. As junk recovery of brass is high, the amount regained through scrapping of worn-out or antiquated equipment about balances that required in making the new machinery to take its place. The fact that the proportion consumed as brass is relatively high does not tend to vitiate the delicacy of our indicator to any material extent.

"It was because copper is the true indicator of fundamental conditions in the United States that I said, in an article published about five months ago in *The Street*, that before industrial conditions can again be good in this country, all our other important industries must go through a period of price deflation similar in the main to that through which copper had gone. Moreover, just as copper is now selling at materially less price than the ten-year average preceding the war, so also must the general level of prices in the United States reach pre-war averages, and in many notable instances go temporarily below those levels, before the United States is again prosperous industrially. Increasing realization of this fact is the explanation of the steady downward trend in stock market averages.

"Readjustment must be effected mainly through employers' taking a minimum of profits, just as has been done by the copper companies, and not by cutting of wages. Otherwise serious trouble will result, for the United States depends primarily upon domestic consumption, not upon foreign buying, for its prosperity; and domestic consumption in its turn depends primarily upon our workers being paid good wages.

"Wages will not stay at present levels in general industry any more than the wages of the copper miners at Butte can remain at present levels. But just as the copper producers have brought down the price of their product before asking their miners to take less, and have shown clearly that they were willing to do their part in expediting deflation and in hastening return to such conditions that capital can again begin to think of making permanent investments in copper equipment, so also must all the other of our great industries follow the same course."

The mineral products situation is thus reviewed by the *Industrial News Bureau:*

"The industries of mining and smelting have come through the most trying conditions since the close of the world war. The immediate cutting off of war demands for all metal products and the enormous accumulations in the hands of the various governments, with the inflation of labor and material and products entering into mining operations, left all mining, smelting and reduction enterprises suspended in midair. The monetary metals remained at a fixed value based on world-wide pre-war cost of production. Gold and silver prospecting and mining on a small scale has practically been wiped out. There is scarcely an ounce of gold, silver or platinum taken out of the earth today but at a loss, and how long can this continue? A new basis of value of these metals, fixed by law at a higher price, a bonus for production direct, or a sliding scale adjusted to an index number found from the products entering into the production of monetary metals—some such plan must be worked out if our country is to remain the premier producer of monetary metals in the world. Copper, lead and zinc, which make up the bulk of the great western metal industry, have been struggling for their existence for two years with war time wages and overhead expenses and peace time prices. European buyers who were our heavy consumers have been unable to purchase, due to exchange conditions. The mines have made an heroic effort to keep up operations and maintain wages and as a last resort copper producers are attempting to stimulate consumption by introducing copper, the everlasting metal, into more general use in home utensils, roofing, window frames and sash, automobile trimming, and for many other commercial purposes where permanency is desirable."

WORKMEN DIVIDE ALL PROFITS.—Employees of the shops of the Newbern Iron Works and Supply Company of Newbern, N. C., are now working on a profit-sharing basis which is so out of the ordinary that it is attracting wide attention. The owners of the company are operating their machine shops and foundry, deducting the actual cost of operation minus any profit to them, and are allowing the workmen to divide all profits among themselves each week.

SEEK LEAD TARIFF.—Action urging Congress for a higher protective tariff on lead will be taken by Utah producers of the metal. A number of operators of Utah lead mines met in the office of A. G. Mackenzie, secretary of the Utah Chapter of the American Mining Congress, and outlined a plan of action. A committee consisting of Ernest Bamberger, chairman; W. Mont Ferry, Fred Cowans, E. J. Raddatz, Imer Pett and G. W. Lambourne was appointed to collect data to submit to Congress relating to the cost of producing lead.

As European countries have large stocks of the metal and Australian mines are increasing production, the outlook for the domestic industry is declared to be menacing unless the present tariff of three-quarters of a cent a pound is increased. Due to the rate of exchange, European or Australian stocks can be sold in the United States at the present price at a large profit.

Nevertheless, the present price of 5 cents per pound, after settlement is made on that basis with local producers by smelters, is said to be considerably less than the cost of production.

MANGANESE DEPOSITS IN ARKANSAS

MANGANESE is one of the minerals that was widely sought during the World War, when the restriction of imports of foreign ores caused a great demand for domestic ores, for which very high prices were paid. The search disclosed many undeveloped deposits in the United States, some of which were mined. The United States Geological Survey made a national survey of our manganese deposits and has issued a number of reports describing them. A brief report just issued describes the manganese deposits of the Batesville district, in north-central Arkansas, which have been worked intermittently since 1849 and have yielded both high-grade and low-grade ore for metallurgic use. The output of high-grade ore in this district from 1849 to 1918, inclusive, was 75,985 tons, and that of low-grade ore was 69,237 tons. Mining in the district was especially active during the war.

This report, which is by H. D. Miser, is entitled "Preliminary report on the deposits of manganese ore in the Batesville district, Ark.," and is published as Bulletin 715-G of the United States Geological Survey. It may be had free of charge on application to the Director, United States Geological Survey, Washington, D. C.

SHIP BOARD RECEIVES COAL BIDS

Bids for supplying the United States Shipping Board with coal for the ensuing year range from $6 to $12 per ton. The bidders include:

G. Patchel & Co., Philadelphia; Courtright Demmick & Co., Philadelphia; Lake and Export Coal Corporation, Norfolk; Penn Fuel Co., New York; W. H. Bradford & Co., Philadelphia; Maryland Coal and Coke Co., Philadelphia; Universal Transportation Co., New York; Ainsworth Coal and Iron Co., Philadelphia; L. Stern, Baltimore; Charles Allen, Charleston, S. C.; F. Gillmore & Co., Pensacola; Horace Turner, Mobile, Ala.; Jewett Biglow & Bros., Baltimore; U. S. Fuel Corporation, Chattanooga; Central Pocahontas Coal Co., Norfolk; Mobile Coal Co.; Southern Coal Co., Jacksonville; Southern Coal Co., Birmingham; Maritime Coaling Co., Boston; Logan Coal and Supply Co., Jacksonville; Petros Coal Co., Petros, Tenn.; Taggart Coal Co., Savannah; Gulf Coal Co., Mobile; W. C. Atwater, Inc., New York; New Orleans Coal Co.; Fort Dearborn Coal & Export Co., N. Y.; W. G. Coyle & Co., New Orleans; Standard Fuel Shipping Co., Savannah; Godley & Griffen, Savannah; George D. Harris & Co., N. Y.; Hartwell & Lester, Inc., N. Y.; Ship-Rode Coal Timber Mfg. Co., Pittsburgh; Chesapeake and Ohio Coal & Coke Co., N. Y.; Commercial Coal Co., N. Y.

COAL MINE FATALITIES

COAL MINE FATALITIES during September, 1920, in all states except Kentucky, from which the Bureau of Mines did not receive a report, totalled 172, or two more than a year ago. The increase was 1.2 per cent. Estimating the September output at 54,029,000 tons, the fatality rate was 3.18 per million tons produced, a decrease from the fatality rate of 3.62 for September during the last seven years.

NINE MONTHS' COAL OUTPUT

COAL PRODUCTION during the first nine months of 1920 was 462,933,000 tons, an increase of 54,288,000 tons over the corresponding period of 1919. Exports totalled 30,503,066 short tons, valued at $230,281. Of this export tonnage, 26,387,215 tons was bituminous and 4,115,851 tons was anthracite.

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ANOTHER COAL INVESTIGATION

WE HAVE WITH US TODAY, as we had yesterday and apparently as we will have forever, another coal investigation. So many congressional committees, grand juries, commissions, bureaus, civic societies, religious bodies and state, county, city, ward and district authorities have conducted fuel inquiries that it is no wonder the editor of the *American Coal Journal* recently burst into song and penned the little ditty:

Count that day lost
  Whose slowly sinking sun
Sees in coal no
  New Inquiry begun.

The most recently promised, or threatened, investigation is to be conducted by the "Industrial Research Division" of the "Church League for Industrial Democracy," which apparently is a half-brother or nephew or something of the "Federal Council of Churches" and a step-kinsman of the "Interchurch World Movement." The leader is to be an eminent New York divine, and he will have associated with him two theological professors, the vice-president of a New York daily newspaper, the president of a state federation of labor, a lady college president, a member of the National Young Women's Christian Association, the president of the Amalgamated Clothing Workers of America, two magazine writers, one dean, three rectors and the editor of the largest socialist daily in the country.

The investigators will not be content with half-way measures. They intend to learn all about it while they are at it. Their official announcement proclaims that they will not only work along the general lines followed by the "Interchurch World Movement" in its steel investigation, but that they will give special attention to contracts between employers and employes, with particular consideration for the "spirit" of cooperation between the two; that they will also investigate housing and rental conditions, especially in industrial settlements and localities, and that they will conduct an intensive study into wages paid, working conditions of the mines, and the social environment of the mining communities.

This is quite a program. If there is anything in the public, private, home, business or religious life of the mining community which is not to be surveyed, analyzed, dissected, passed upon and pasteurized it is difficult to name it off-hand—except, of course, the little matter of increased production of anthracite and bituminous, which is too trivial to talk about, even to think about.

The ability of the investigators is self-evident. The list of names is impressive and representative. What it lacks in some respects it more than makes up in others. It does not include any mining operators, engineers or geologists, but their assistance is not at all necessary. The list does not contain the name of any one who earns a living by the sweat of his brow, but it does embrace several who derive their incomes from swinging their tongues. There are none who know how to handle a pick, but several who can shove a pen mightily. None is included among the "best minds" with whom President-elect Harding counselled at Marion, but several of them could go to the Atlanta penitentiary and gain an immediate audience with Eugene Debs. It is not necessary to give their names; a catalogue of their avocations and entitlements is sufficient to show that they constitute a select assemblage, a company of colossal intellects, a galaxy of greatness and goodness. Their labors will undoubtedly round out and bring to perfect completion the unfinished but highly valuable and resultful endeavors of all the other notable investigating bodies who have gone before them. Further comment would be presumptious.

But there is one thought which suggests itself and insists upon being expressed. It is this: If all the investigators engaged in digging into the facts respecting the coal situation will just forget about the facts and go to digging coal, there will be no more fuel famines as long as the world stands.

THE GOVERNMENT AND COAL

IT IS SOMEWHAT DISTURBING to find the press of the country so ready to justify government interference in business matters, which public at the same time applauds the platform announced by President-elect Harding in favor of less government in business and more business in government. The *Washington Post* in a recent editorial states:

"Congress can do no better service for the people than to relieve them of the exactions of speculators and profiteers in coal. It is a difficult task, but it can be performed if the will is there to perform it. One of the first points to be ascertained is the proper price to be allowed, which must be based upon the cost of production. Producers have stood in their own light by confusing the public as to the actual cost of production, and in some cases producers have no clear idea of their own regarding costs. The government can ascertain the cost by taking over the ownership and operation of typical mines, if in no other way. This is a condition which calls for prompt remedy, and there should be no hesitation in applying the strong hand of the government, not for universal government ownership and operation, but solely for the purpose of getting at actual costs.

"There are certain grades of coal which the government must have. The navy needs a high-grade coal which ought to be owned in the ground by the government; and perhaps the same rule should be applied by the shipping board for the sake of maintaining the merchant marine. Why should speculators be permitted to manipulate the price of coal used by the navy and the merchant fleet? The government should take over the coal fields which yield this particular grade of fuel. If the owners will not sell at a fair price, let the power of eminent domain be exerted for the benefit of the whole people.

The *Washington Post* evidently does not know that the greatest known supply of Navy grade coal is now owned by the United States Government and it is probably true that the *Washington Post* may not be aware that before the war governmental interference with the usual methods of development of western resources absolutely prevented the development of the Behring coal fields in Alaska, and that, during the war when the transportation needs of the country were so taxed as to make necessary embargoes upon the transportation of all but war supplies, trainload after trainload of coal was shipped from West Virginia to Pacific Coast ports to supply the Pacific Navy.

The tendency toward the centralization of power in the Federal Government is most dangerous to the future maintenance of republican government.

The coal operators of the country are and have at all times been ready to produce coal at a price cheaper proportionately than any other article upon the market. The business of transportation, necessarily a monopoly, should be supervised and regulated by the central government but it is right at this point where the industry of coal supply broke down in that the railroads were not able to transport coal from the mine to the consumer, partly because governmental interference in Alaska had made necessary the use of those transportation facilities to haul coal from Virginia to the Pacific Coast, and partly because over-regulation had prevented development of railroad facilities commensurate with the growth in other lines.

No business with a capacity in excess of the possible demand needs other regulation than the law of competition. Legislators have much to learn, who believe they can improve upon the law of supply and demand as a controlling factor in industrial life.

The average price of coal to the consumer in the United States is proportionately less than the price of nearly all food supplies. Why single out the coal industry?

UNEMPLOYMENT AND HIGH PRICES

THE PROBLEMS OF THE UNEMPLOYED are sufficiently difficult when the prices of food products are at normal levels, but when, as now, living costs are abnormally high, these problems become a catastrophe. The truism, that a man cannot lift himself over the fence by pulling on his boot straps, is in part denied by the fact that the boot straps of unemployment drag men farther away from an adequate wage level. The more of unemployment, the less of production, the higher the prices. Not only are the unemployed unable to help themselves but the friends who usually might help find their wages fully absorbed by the high cost of living and are therefore unable to help. The writer's long-time friend, the western story writer, Chauncy Thomas of Denver, one day before experience had brought to him its lesson of thrift, bitterly announced, "Governor, I'm in hard lines." "Broke again Chauncy?" "Yes, but that's usual and I don't mind it; but the serious thing is, all my friends are broke."

The problem of the improvident is really serious when all his friends are broke, the condition at the same time being intensified by a high price market. The obvious remedy is that no man should ever live up his full income. Every man should save enough from his income to provide against the proverbial rainy day. But the truth is the majority of workmen do not save and consequently the present high level of prices comes to the unemployed with crushing force. Undoubtedly these conditions will teach many a useful lesson, but we well might hope that this lesson could be learned by some other method than that of the bitter experience which this process entails.

WHY OPTIMISM?

THE UNITED STATES is blessed with untold natural resources and complete machinery to make these resources available for use. At the close of the war surplus stocks of both raw materials and manufactured products were generally available. These stocks are largely exhausted; the world's storehouses are vacant, public improvements have been neglected for years, and outside of the United States no railroad system is in even fairly good order. To meet the demands for home consumption would require a normal activity of all of the nation's industrial forces. To create that surplus which will be demanded by foreign countries, the producing forces of the United States will be over-taxed for many years to come With prices properly adjusted, the future gives greater promise of commercial activity than has ever before prevailed. War time activities were excessive in some lines and abnormally low in others. The future promises unusual opportunity for every productive force in the nation and whenever the price levels shall have become normal, business cannot long remain stagnant. It is believed by the best trained economists that the bottom has been reached in many lines and is near in all lines. Every reason points to unheard of business prosperity.

THE OPEN SHOP

A MEETING of 109 national and international unions has been called for February 23 in Washington, "For the purpose of considering the attacks now being made on the trade union movement." These attacks, it is stated, include attempts to establish the anti-union shop, wage deductions, anti-strike laws, compulsory arbitration, labor injunctions and publicity that would mould the public mind to accept these backward steps. "Our opponents are mistaken," it is announced, "if they imagine they have made the slightest progress in alarming workers or that they will humbly accept a policy of reaction."

The policy of reaction referred to consists of those principles which will insure to every individual absolute freedom of action, subject only to those restrictions which are necessary to prevent interference with the rights of others. It is true that a general movement is in progress looking to the establishment of the Open Shop, the shop in which every man is entitled to work whether he is or is not a labor union member. If trade unionism cannot exist except it be allowed to dictate those conditions under which non-members of the union may exist, then trade unionism in the end will be obliged to surrender. It will not do to befog the issue by saying that this fight is for a closed shop against the unions. The great majority of employers have no objection to their employees belonging to unions, nor any serious objection to collective bargaining. They do object to conditions under which they are unable to select their own employees, to discharge them when they are inefficient or insubordinate, and they do object to collective extortion under the euphonious title of collective bargaining.

The industries of the nation cannot maintain their supremacy except under conditions where operations are properly financed and properly directed. Brains and capital are just as essential to production as labor. The best results from the efforts of labor can only be obtained under the direction of a guiding hand which coordinates all effort to the common end. Perfect cooperation of brains, brawn and capital are essential to that cheap production which has brought to all classes today the luxuries which were not available to even the few in the olden times. The principles of the Open Shop are necessary to the independence of the American workman. If the labor union cannot furnish labor in open competition with non-union labor, there is something wrong with labor unionism.

THE COAL INDUSTRY

THE DEVELOPMENT OF A GREAT COUNTRY does not depend entirely upon any one factor. Natural resources, labor, business management and capital are the essentials upon which the prosperity of a nation like the United States is based. The great industrial growth of the United States can, however, be said to more largely depend upon cheap power than upon any other single factor. For many years the coal industry furnished the nation's manufacturing and transportation industries with the cheapest fuel available anywhere in the world. For many years this fuel was sold at too low a price. The average price of bituminous coal at the mine, for five years prior to the war, was \$1.12 per ton. A rather careful investigation at that time convinced the writer that during that five-year period the coal industry, as a whole, had sustained an operating loss of from 10 to 25 cents per ton, on its total production an average loss of more than \$50,000,000 annually during that five-year period. During those years many and various were the appeals made to the government for such aid as would make possible the operation of the coal industry upon a profitable basis.

The coal industry then believed that if it could be given the right under governmental supervision to form trade combinations by which the waste could be avoided, that the business might be made profitable without an increase in price to the consumer. Early in 1913 a meeting of the coal users of Indiana and Illinois was held in Chicago at which it was said that 85 per cent of the total production of those states was personally and actively represented. At that meeting the then conditions were fully outlined and an effort made to devise some plan by which the waste in the industry might be avoided. It is perhaps fair to say that the interest of the operators was based largely upon the fact that this waste prevented the making of profit rather than because of the wasting of the natural resources. Competitive conditions were such as to force the operator to look in this direction for a possible profit. After a two-day discussion, the writer was asked to devise, if possible, some plan to meet the situation. As a result of this, a bill was drawn providing for the creation of what was then to be called an Interstate Trade Commission, which was to be given the authority to pass upon business combinations designed for the public benefit, and to authorize business to be carried on in accordance with plans approved by the Commission. It was not proposed to repeal the Sherman Law but that prosecution under it would lead only to a mandatory order forbidding a continuance of the acts complained against. This plan did not meet the approval of the coal industry as a whole, although it did meet the approval of the leading operators of Indiana and Illinois. Others objected upon the ground that it meant additional interference of government in business. Coal operators were then liable to criminal prosecution, subject to fine and imprisonment, under the Sherman Law for acts which would have been a substantial advantage to the operators, to the country and to the consumer. In April 1915 a committee of Indiana coal operators consisting of W. S. Bogle, John T. Connery, J. C. Kolsem, Hugh Shirkie, Morton L. Gould and Carl Scholz came to Washington with the intention of interviewing first the Federal Trade Commission and then the Department of Justice. The situation in the coal industry was carefully outlined to the Federal Trade Commission which advised that it had no power to render any assistance in the premises and suggested that the matter should be taken up with the Department of Justice. The Department of Justice expressed great sympathy with the situation but that Department was unable to give any guiding advice. President Wilson then being out of town, the matter was presented to him by letter and he replied as follows: "You may be sure that I will consult with my associates here, and that, if there is any possible way in which we can help in the situation which you unfold, we shall be glad to do so." This was but one among a number of appeals which were made to the authorities for some method by which the industry might be relieved of the bad effects of the cut-throat competition existing between more than five thousand individual operators with a capacity of producing 50 per cent more coal than the market could possibly consume. The situation was made more difficult by the fact that these operations required continuous working at the highest productive capacity in order that the overhead charge might be kept at the lowest point possible in order to meet the cut-throat competition of other producers, each in turn equally anxious to keep down the overhead expense. But no aid, no promise of aid, no indication of possible aid was offered. When the war broke out the government required that these operators should unanimously agree in a way which would have subjected them all to penitentiary sentences before the war. An appeal for government supervision was refused before the war, immediately after all operations had to be uniform under government direction.

When the war was over the coal industry was completely disorganized, but still in position to furnish more coal than the country could consume. Transportation facilities were so disorganized as to interfere with the distribution of coal; speculators took advantage of the situation; war orders and governmental interference left some sections without a proper supply of coal and the nation's wrath turned itself against the coal operators, who have for twenty years furnished coal cheaper than it has been provided to the consumers in any other nation in the world. Coal operators are to be punished for having furnished coal so cheap as to build up in this country its enormous industrial prosperity. Without cheap power, without cheap coal for transportation this magnificent progress could not have been made.

The coal industry today is maligned, slandered and blamed for conditions for which the greater part of the coal operators are in no wise responsible.

LABOR SHOULD GO TO WORK

THE MOST DISTURBING indication in the industrial field is the unusually large number of unemployed. This unemployment is based upon the fact that the markets of the future will not absorb goods produced at war time costs. With living costs twenty per cent below war prices and continually falling, there is every reason to expect labor to accept a similar reduction because without that reduction low priced goods are impossible. The *Monticello N. Y. Watchman*, in a recent editorial, comments as follows:

"Raw materials are coming down in price and labor prices must follow. The public insist on lower prices for the necessities of life and will not buy unless the reduction is made Manufacturers have got to sell the goods for less or not sell them at all and they cannot sell them at lower prices if they have to pay the present high prices of labor. Labor, therefore, must quit striking and go to work. Half of labor for the last two years has been on a strike, upsetting business, decreasing products, increasing prices, and pauperizing itself. Had there been no strikes labor today would have been rich instead of hunting for soup houses and bread lines."

The above is sound advice and should apply as well to capital as to labor. With unbounded natural resources, with the expanding needs of the nation, with foreign markets, to which goods may be shipped as soon as the financial situation has been bettered, there is every promise of the highest remuneration which large consumption will justify.

THE SALES TAX

THE PROPAGANDISTS of the sales tax, and there are many, freely admit that their intense activities during the last year are but the groundwork for a campaign forecasted to captivate sentiment throughout the country and force the hand of Congress. Therefore, in advance of this Alexandrian campaign, it may be presumed that there are many who have not yet grasped the "principles" and exact nature of this species of taxation.

We have perhaps the requisite patience, but scarcely the time or space, to attempt a complete exposition of the sales tax. In the first place, "sales tax" is a generic term which has been liberally applied to all of the myriad forms of excises, but particularly to the many new proposals primarily designed to eliminate or reduce the present taxes upon luxuries and non-essentials. We have sales taxes at the present time, of course—taxes upon sales of tobacco, jewelry, sporting goods, candy, costly apparel, etc., etc. But, it is claimed, such taxes are no longer wanted; rather, they should be extinguished and the compensatory revenue be derived from a "general sales tax" at a single fixed rate, spread "thinly" over all sales, including, although not conspicuously mentioned, the necessaries of life.

"Everything should be treated alike." Some of the devotees of this form of tax "simplification" rest here content, but many more think such a fine idea should be carried to the ultimate of its almost endless possibilities. It being contended that the rich man and the wealthy corporate octopus are not paying taxes, but rather shifting them to the poor ultimate consumer, why not levy a "general sales tax" upon everybody as well as everything, forget the inequities, iniquities and complexities of the income tax, and all be happy? "Everybody should be treated alike:" (Except, of course, college professors, economists and that ilk, who should be set to figuring excess profits taxes for the rest of their abnormal lives as punishment for the sins committed in defending taxation according to ability to pay.) Extremists being somewhat in disrepute at the present time, there are few who go so far as this, however. On the vast middle-ground rests a multitude of schemes, some of which have been worthy of, and have had, careful and hopeful consideration. There are advocates who would limit sales taxes to merchandise, and some would exempt, as has Canada, the essentials of life. Others would confine the tax to the final sale to the consumer, despite the difficulties of defining the latter in each instance. Others would do this, or that, or these, or those, and others would not. But over it all the battle-cry rings out: "'Tis a simple thing."

Simplicity is presented by proponents as the chief virtue of the sales tax, and we can understand the reaction from the delirium of the present excess profits tax. It is much more difficult, however, to comprehend the mental twists of the self-acknowledged leaders of the sales tax propaganda when they declare publicly that "There is no science of taxation" and that "Billions can be raised by the sales tax but nobody will know it or feel it." If there is anybody in the United States who truly believes that billions of dollars of revenue can be raised by a sales tax without bothering anyone, we advise him most sincerely to join the movement; also, to help put in the penitentiary those responsible for the revenue laws of the last decade.

The blind obsession which seems to possess many of the violent proponents of the sales tax is likely to react to their disadvantage. The urge toward simplicity in taxation is a movement of large proportions, but the unmuffled tirades of some New York interests recently will be found in time but a little toot whistle on a big steam roller. Revenue legislation moves cautiously. Proposals such as those of Otto H. Kahn, who suggests an experimental sales tax upon commodities of one-third of one per cent, in addition to some existing excises, are entitled to the respect of all men, however we may differ in principle. But blatant demands upon Congress for a taxation revolution involving billions of dollars annually, with anathema upon the heads of all who dare oppose, are worth what they appear to be worth.

Failing the sales tax, what is the answer? For the excess profits tax is to go, the income tax must be adjusted, and the huge hole in the governmental revenues must be plugged. In the words of former Solicitor of Internal Revenue Ballantine, is not the case like that of a very sick patient seeking the way to health? He yearns for a healing touch, a sovereign cure. He has little enthusiasm for the counsel of the experienced physician who tells him there is no royal road; that he must carefully do this, that and the other; must not complicate his troubles by trying undemonstrated or discredited methods; that he may be helped here and there by one medicine or another, but must gradually fight his way back to health. Of such a nature is the program recommended by the Committee of the National Industrial Tax Conference.

SENATOR THOMAS AND REPRESENTATIVE GOVERNMENT

THE FOUNDERS OF OUR GOVERNMENT undertook to create a representative government. The plan contemplated a close sympathy between the House of Representatives and the people through biennial election so that members of Congress should at all times feel their direct responsibility to their several districts. This responsibility to public sentiment was stabilized by a Senate, the members of which were to be one step removed from the people's choice by being elected for a term of six years by the several state legislatures. Senators were expected to be responsible to their constituents, but to be elected for a term sufficiently long to enable them to voice the sober second judgment of the public which was to be the stabilizing influence over the members of the lower house, whose possible retirement from Congress was never to exceed two years ahead.

The President, with a deciding vote upon all matters of legislation, with the veto power except when overridden by a two-thirds majority of both House and Senate, represented as nearly as might be the entire nation.

These public agencies were designed to be thoroughly representative of every phase of public thought, the majority being in position to finally pass upon the rules under which a popular government was to function.

Senator Thomas of Colorado, in connection with his keen and well-founded criticism of certain public expenditures also criticises the fact that our government is bureaucratic and decries with keen satire the fact that members of the Senate and the House are responsive to the wishes of their constituents. It is perhaps wise that these matters should receive thorough discussion and open criticism. To the extent that the American people approve the course of Congress will its members be returned to that body; to the extent that these representatives fail to represent, will others take their places in future elections. That the principles of representative government shall be maintained is vastly more important than the practice of economy, even granting this to be of much importance.

Senator Thomas, referring to local sentiment in the home district, says:

> "It counts, of course; it counts so much that we legislate here not according to our convictions but according to the demands of our constituents: in other words, we are no longer Senators; we are delegates; we are rubber stamps. We used to keep one ear to the ground, but now we keep both, and as soon as we think we know what the prevailing sentiment is at home we make up our minds."

In what other way can the principles of this government, as defined by Lincoln, be made effective: "A government of the people, by the people and for the people." Senator Thomas, as a lawyer well knows that his professional employment has usually been for a specific case or for a period of time determined by the whim of his client. Clients do not usually employ attorneys for a term of years, giving them *carte blanche* authority to handle all of their affairs without direction or further advice from the principal. An attorney represents his client during mutual agreement and the relation may be terminated by either party at any time. The candidate for a seat in the Senate or for a district in Congress is elected for a specified term during which he has unlimited authority to speak for his district whether his acts meet their approval or not. Senator Thomas is one of the few Senators to whom his caustic criticism does not apply. He is one of the few Senators ready to carry out his own ideas without regard to the wishes of his constituents at home. His retirement from public office on the fourth of March takes from the United States Senate one of its most brilliant minds and a most useful public servant and yet his theory of senatorial responsibility to the wishes of his constituents is one of the factors which has brought about his retirement. In connection with much legislation and particularly with reference to the provisions of the Revenue Law of 1918, Senator Thomas has earned the commendation of the mining industry. His record is clean, effective and brilliant. This must be said, even though we may disagree with his theory of the relation which a Senator bears to that constituency which he represents.

FUTURE PRICE LEVELS

PREDICTIONS as to the plan of price levels of the future is somewhat hazardous. There are, however, some fundamental principles which command consideration. If the world stood still, if industrial operations and financial methods remained unchanged, the task would be more simple: but, new inventions may greatly change production costs and the movement of money may be greatly accelerated. The supply of gold is comparatively fixed. The service of gold is enhanced by a more rapidly moving currency and an increased mobility of the world's gold supply. If proper allowance can be made for these varying factors, prediction as to future price levels can be made with reasonable accuracy. A careful analysis justifies the belief that price levels of the future will range from 25 to 40 per cent. above the 1914 level. This estimate cannot be applied to any one commodity but to the average price of commodities. It is probable that the wage scale will range somewhat above this point but it cannot remain on the average of the three years past and permit commodity prices to fall to the predicted level. To the extent that the average wage level, as compared with 1914, is above the index price of commodities, to that extent must capital and management be content with a smaller return. Wage levels seemingly cannot be more than 50 per cent. above the 1914 level. In other words, a 10 per cent differential probably fully measures the excess profits which capital has received and more than that reduction would probably prevent capital from hazardous investment. This would create a condition in which the reduction of wage levels would be forced to a point where enough profit would remain to induce investment; otherwise, labor would be without employment. It seems to be a fair prediction that commodity prices will range about from 30 to 40 per cent above pre-war levels and that wage levels will probably be from 40 to 50 per cent. above prewar levels in the final adjustment of industrial conditions.

THE NORFOLK IDEA

THE CRESCENT IRON WORKS, at Norfolk, Va., in the summer of 1920 found itself unable to continue operations with the high wage levels then prevailing. The Machinists' Union bought up the mortgage and assumed control of the plant. Instead of a long industrial struggle between employers and employees, thrifty employees purchased the plant, assumed its operation and it is now said to be running successfully

This is a splendid remedy for labor troubles. Let labor put itself upon the employer's side by accumulating its savings and applying them to industrial operation. Those who favor the Norfolk idea insist that it offers a legitimate method of obtaining relief. The successful application of this idea to larger operations may be questioned but there would seem to be no reason, where sufficient savings have been accumulated to operate upon a large scale, why the plan might not be applied to the largest possible operations. The one question is whether a coming together of small investors will develop a leader with the brains essential for the economical direction of a large business enterprise and whether an organization so constituted will submit to that discipline which is necessary to efficient operation. With proper management, there is no reason why this plan may not be applied to the largest industrial enterprises.

THE BUSINESS OUTLOOK

MANY AND VARIED are the views expressed concerning the future of American business. Some few feel hopeless as to the future, basing their pessimism upon the accepted belief that prices must necessarily be reduced and that the necessary reduction in wages will be so contested by organized labor as to throw the country into a series of industrial disturbances which will absolutely prevent progress and a return to normal conditions.

A great majority, however, are optimistic concerning the future, the better and prevailing sentiment being that the future is filled with promise. The war left an oversupply in many lines, produced at war prices. The owners of these stocks had to sell these goods at high prices or sustain material loss thereon. Every effort has been made to maintain prices until the high priced goods were disposed of. Production was largely curtailed in the face of falling markets. In many instances the loss has been or is being taken and prices are gradually being brought down to a point which may be regarded as more nearly the level which will exist when normal conditions are again reached. In the meantime stocks are being exhausted and production must shortly again be undertaken on a large scale in order to keep up with the current demand.

The buyers' strike which has been quite generally in operation is being broken by reduced prices. Operations are being begun at reduced costs and it is confidently believed that within the next three months a radical change for the better will take place. The incoming national administration will assure business stability so far as this can be guaranteed by governmental influence. The devastated European countries are gradually improving their financial conditions and there is every reason to anticipate that the last three months of the year 1921 will witness a prosperity which this country has never before known except in war times.

The issue is clearly drawn. The Supreme Court has disapproved secondary boycotts and Samuel Gompers has disapproved its decision. Union labor now has a well-defined opportunity to show which authority it regards as the highest in the land.

Several score government bureaus have been, and some still are, consuming time, money and white paper in investigating the reasons for the high cost of living. Possibly this is one of the reasons.

In disapproving elaborate and costly inauguration festivities, President-elect Harding showed that economy, as well as charity, may sometimes begin at home.

War Finance Corporation Revived

FOLLOWING THE PASSAGE over President Wilson's veto of the resolution reviving the War Finance Corporation, the directors unanimously passed a resolution rescinding its action of May 10, 1920, putting the organization out of business. The managing director has issued an announcement that the corporation is now prepared to consider applications for advances that meet the terms of the law in the same manner that it considered advances prior to the suspension of its activities in May. In submitting applications for loans, applicants should set forth in detail all facts relating to their financial condition, the purposes of the proposed advances and full information to enable the corporation to determine whether the applicants are eligible under the law and can meet its terms and conditions. Insofar as is necessary the corporation will give personal hearings to prospective borrowers. Those desiring information may communicate with the managing director of the corporation, Treasury Department, Washington, D. C.

Cost of the Fuel Administration

The cost of the Fuel Administration from September 1917 to June 30, 1919, was $4,824,681, and on June 30, last there was a balance on hand of $989,137 from the $5,813,818 appropriated, according to a final report by Lawrence Mitchell, assistant business manager of the administration. Washington headquarters expended $2,706,479 and state fuel administrators $1,948,618. By states the largest sum was spent in New York. $212,012, of which $51,675 was in New York city; Pennsylvania was second with $84,025, and Illinois third with $66,849. The cost of administering the law in New England was $99,812. There were fifty-two "dollar a year" men in the administration and the highest yearly salary paid was $3,600.

RENO EXPERIMENT STATION DEDICATED BEFORE NOTABLE GATHERING.

THE RARE AND PRECIOUS METALS station of the Bureau of Mines at Reno, Nevada, which will carry on investigations formerly made at the Golden station, was formally opened January 20. The station will be operated by the Bureau of Mines in cooperation with the Mackay School of Mines of the University of Nevada. Dorsey A. Lyon, supervisor of stations and chief metallurgist of the Bureau of Mines and Francis C. Lincoln, dean of the school of mines of the University of Nevada, were in charge of the dedication ceremonies.

The following mining school representatives and Bureau of Mines station heads were in attendance: Elmer A. Holbrook, chief metal mining engineer and executive officer in charge of the investigations branch; Harrison E. Meyer, chief clerk; Charles E. van Barneveld, superintendent, Southwest Experiment Station; Lionel H. Duschak, superintendent, Pacific Experiment Station; Samuel C. Lind, superintendent, Rare and Precious Metals Experiment Station; Oliver C. Ralston, superintendent, Northwest Experiment Station; Thomas Varley, superintendent, Intermountain Experiment Station; Gurdon M, Butler, dean of the school of mines, University of Arizona; Frank H. Probert, dean of the school of mines, University of California; Joseph F. Merrill, dean of the school of mines, University of Utah, and Milnor Roberts, dean of the school of mines, University of Washington.

NEW HEAD FOR BARTLESVILLE EXPERIMENT STATION

AFTER SERVING AS ASSISTANT for one year, H. H. Hill has been appointed superintendent of the Petroleum Experiment Station of the Bureau of Mines, Bartlesville, Oklahoma. His appointment was made retroactive to January 1, when he actually assumed direction of the station's work.

Beginning as a chemist, Mr. Hill has spent several years with the Bureau of Mines. He became one of the service's specialists, devoting his attention principally to refinery engineering. His experiences will come in handy at Bartlesville, for the station operates a complete refinery in miniature. While detailed at Pittsburgh and Washington Mr. Hill prepared, in conjunction with E. W. Dean, Bulletin 191, "Quality of Gasoline Marketed in the United States," and Technical Paper 181, "Determination of Unsaturated Hydrocarbons in Gasoline."

Mr. Hill succeeds Earl W. Wagy, who became superintendent when A. W. Ambrose was called to Washington to take up the work previously carried on by J. L. Lewis as chief of the petroleum division. Mr. Wagy resigned from the Bureau of Mines service to accept a position as production engineer with the Standard Oil Company of California.

M. J. Kirwan, formerly oil and gas supervisor for the California State Mining Bureau, has been detailed to the Bartlesville station to take charge of drilling and production work. He recently spent a year in Japan with the Nippon Oil Company.

Nine Months Coal Output

COAL PRODUCTION during the first nine months of 1920 was 462,933,000 tons, an increase of 54,288,000 tons over the corresponding period of 1919. Exports totalled 30,503,066 short tons, valued at $230,405,281. Of this export tonnage, 26,387,215 tons was bituminous and 4,115,851 tons was anthracite.

NEW IDAHO SENATOR APPRECIATES NEEDS OF MINING INDUSTRY

IF FELLOW SUFFERERS can always be relied upon to help one another out in emergencies, then the mining industry of America ought to be able to lean upon Senator F. R. Gooding of Idaho with the most implicit and trusting kind of reliance. For he also has suffered in the mining game, having endured the keenest and intensest kind of agony at a time of life when all suffering is more or less agonizing. He lost the first twenty-six hundred dollars he ever had in a mining venture.

That, however, was not the end of his experience with mining operations. Having come from England just as the Civil War was closing, and having received a common school education at Paw Paw, Mich., and having moved to California when he was fifteen and to Idaho when he was twenty-one, it goes without saying that he was of one of the pioneering kind who would never let a combination of disappointment, disillusionment and total disbursement of all his funds put a permanent check upon his progress in any particular direction. He stuck right with the mining game, albeit to another phase of it, and from 1881 for about ten years thereafter he was a successful mining contractor in the Wood River country. During this period he saw so much of mining and so little of everything else that to this day he summarizes his experiences of the whole decade in the one sentence: "I spent ten years in a mining camp."

SENATOR F. R. GOODING
of Idaho

At the end of the decade he found time for other things. For one thing, he served as a member of the Idaho Senate, and for another he became chairman of the Republican State Central Committee. He also served as governor of the state. During all this time, and the period which has intervened since, he farmed and raised sheep, and for the last several years (including the present one) he has cultivated several thousand acres of land and has been the owner of some of the largest flocks of sheep in Idaho. But he has never forgotten that his first success in life, as well as his first setback, was due to his activities in the mining field. He has always kept posted on the progress and the needs of the industry, and when on January 15 he took the oath of office he carried into the Senate Chamber a thorough knowledge of the mining situation of today and a keen appreciation of its present needs.

"I am familiar with the conditions and needs of the industry and I have always been one of its friends," he said to a representative of the Mining Congress Journal while getting straightened out in Room 341 of the Senate Office Building.

"I appreciate the importance of the mining industry, the drawbacks and the hardships which surround it and which go with it. The industry, as you know, needs protection. It and all other lines will have to have greater protection than ever before. Prices, wages, freight rates will never go back to pre-war levels. The need for tariff protection ought to be apparent."

Senator Gooding defeated Senator John F. Nugent in the general election. When Senator Nugent's appointment to a federal office was confirmed, Governor D. W. Davis appointed Senator Gooding to serve out the unexpired portion of his term.

LUMBER INVESTIGATION NEXT

THE DEPARTMENT OF JUSTICE during the second week in January announced a general investigation of lumber interests and a decision to push its inquiry into the building materials situation, particularly in connection with the Lockwood investigation in New York. The Southern yellow pine industry, according to the announcement, will receive special attention. The Justice Department's announcement followed the submission to Congress of a bulky report by the Federal Trade Commission of the national lumber situation.

WESTERN SUPERINTENDENTS CONFER

SUPERINTENDENTS of Western Experiment Stations of the Bureau of Mines held a conference at Berkeley, Cal., January 24-26. Dorsey A. Lyon, chief metallurgist and supervisor of stations, was in charge. All of the station superintendents and mining school deans who took part in the dedication of the Reno experiment station on January 20 attended the Berkeley conference. A special meeting was held for an exchange of opinion on current subjects between the superintendents and the mining school heads.

RESUME OF YEAR'S FIVE-METAL OUTPUT OF ROCKY MOUNTAIN STATES

METAL PRODUCTION in eleven Western mining states during 1920 showed, on the whole, either in quantity or value or both combined, heavy reductions as compared to that of 1919. Depressing market conditions, freight rate increases and expensive labor and materials were the causes.

Arizona was the only state whose gold production during the year was greater than that of 1919, although Oregon's output was almost as large. Silver production increased in five states and declined in six. Increased copper output was noted in six states, but in each state in which values were calculated it was shown that they were smaller than in 1919, notwithstanding increase in output. Lead production increased in seven states and declined in two, results in two other states not being known. The value of output in Montana was greater than in 1919, notwithstanding smaller production. Arizona and Colorado were the only states whose zinc production declined, with reports from Oregon and South Dakota not in.

Idaho, Montana, Nevada, Utah and Washington, despite adverse conditions, emerged at the end of the year with incomes from the five metals combined exceeding those of the year before. In each state, the falling off in some metals was counterbalanced by increases in the value of others. Idaho, according to preliminary figures, enjoyed the most successful year of any of the Rocky Mountain States, its five-metal production being about 50 per cent greater than in 1919. This showing was made by an increase of 35 per cent in silver and of more than 100 per cent in lead.

A survey of the year by states follows:

ARIZONA.—Although the quantity of output of the five metals, except zinc, increased during 1920, the value, $107,725,000, represented a decrease of $3,433,000 below 1919. The low price of copper was responsible for the diminished total.

Production figures for the two years are shown in the following table:

	1919	1920
Gold	$4,506,413	$4,686,000
Silver (fine ounces)	5,266,605	5,532,000
Copper (lbs.)	538,100,844	559,235,000
Lead (lbs.)	10,203,078	14,000,000
Zinc (lbs.)	1,717,000	1,457,000

Arizona gold production increased in 1920 as a result of the slight improvement in production from copper ore and the steady output from the Oatman, Mohave County, region. More than half the output of the state came from Mohave County.

The silver output increased in value from $5,898,598 to $6,032,000. Although the quantity of copper production increased in 1920, the value decreased from $100,086,757 in 1919 to about $95,741,000 in 1920. Most of the smelters produced more copper than in 1919, but no effort was made to equal the production record of 1918. Toward the end of the year many companies were operating at a loss.

Lead production increased in value from $540,763 in 1919 to $1,147,000 in 1920. The recoverable zinc output decreased in value from $125,341 to $118,000.

Arizona mining companies during the first eleven months of 1920 paid in dividends $16,706,783, exclusive of $4,500,000 of the Phelps Dodge Corporation, which also operates mines in Mexico and New Mexico.

CALIFORNIA.—Labor conditions were still unsatisfactory at the close of the year. Expensive and inefficient workmanship was responsible for the closing down of many large mines and of the curtailment of operation in others. Other factors contributed to reduce production, as seen in the table:

	1919	1920
Gold	$16,695,955	$13,933,600
Silver (fine ounces)	1,107,189	1,538,660
Copper (lbs.)	21,732,507	12,934,900
Lead (lbs.)	3,568,267	5,071,600
Zinc (lbs.)	472,990	1,572,500

Charles G. Yale, of the San Francisco office of the Geological Survey, who made the report on this state, said it was almost impossible to obtain capital for gold mining, as very few mines were making a profit. "Some large producers are unwilling to push production and development and pay the consequent war income tax, so they are only keeping the mines running" Mr. Yale said. "The force of men engaged in all kinds of mining work has been cut down. The cost of producing gold has been steadily rising for several years, until it nearly prohibits all profit." Except for dredging, the gold mining industry would be at a still lower ebb, Mr. Yale holds. Of the 1920 production, 52 per cent was obtained from lode mines and 42 per cent from placers. At the end of the year the dredges were producing 96 per cent of the placer gold, or 46 per cent of the state's entire output.

The greater part of the silver output of 1920 came from lead-silver ores in the southern part of the state. The increase in lead was due entirely to the production of one mine in southern California, which reported no output in 1919.

COLORADO.—The 1920 production of gold, silver and zinc showed decreases, while that of lead and copper showed gains, according to Charles W. Henderson of the Geological Survey. Following are the figures for two years:

	1919	1920
Gold	$9,867,927	$7,650,000
Silver (fine ounces)	5,639,516	5,400,000
Copper (lbs.)	3,310,675	3,600,000
Lead (lbs.)	35,859,090	44,600,000
Zinc (lbs.)	51,445,429	42,000,000

The increase in output of lead and copper and the maintenance of zinc production to 80 per cent of the 1919 level is attributed to continued operations of a concentration-flotation plant in San Juan County.

IDAHO.—The five-metal output of 1920, according to C. N. Gerry of the Geological Survey, approximated $32,144,000, which was $13,770,000 more than the 1919 production. The year's output of the different metals, as compared with 1919, follows:

	1919	1920
Gold	$713,238	$469,000
Silver (fine ounces)	5,579,056	7,545,000
Copper (lbs.)	3,122,763	2,203,000
Lead (lbs.)	182,341,898	254,662,000
Zinc (lbs.)	15,994,229	28,309,000

Silver production increased more than 35 per cent, and its value increased from $6,248,543 in 1919 to about $8,227,000 in 1920. The value of the mine output of copper decreased from $580,834 in 1919 to approximately $377,000 in 1920. On account of the fact that the average price of lead was higher, the value of output increased from $9,664,121 in 1919 to $20,777,000 in 1920. The price of zinc was also considerably higher in 1920.

MONTANA.—The state's production for the year was valued by C. N. Gerry at $64,685,000, an increase of $2,648,000 over 1919. Production for 1919 and 1920 follows:

	1919	1920
Gold	$2,229,588	$1,742,000
Silver (fine ounces)	12,541,181	12,427,000
Copper (lbs.)	169,981,288	176,600,000
Lead (lbs.)	34,437,764	32,144,000
Zinc (lbs.)	168,763,823	203,953,000

Silver production decreased in value from $14,046,123 in 1919 to approximately $13,551,000 in 1920. As during former years, most of this silver came from copper ores, but considerable production was also obtained by smelting residue from zinc ores. The state remained the leading silver producer of the nation, with Utah a close second. Despite the increase in copper output, there was a decrease in value of $1,377,000. Notwithstanding the decrease in quantity of lead production, the value of output increased from $1,825,201 in 1919 to approximately $2,623,000 in 1920. The 1920 zinc output was very close to the record mark of 1918. Its value was about $16,520,000 as compared with a value of only $12,319,759 during the year preceding. During the first eleven months of the year Montana operating companies paid approximately $9,515,000 in dividends.

NEVADA.—The output of gold, silver, copper, lead, and zinc during 1920 was valued at $23,960,000, or an increase of $527,000 over 1919, according to Victor C. Heikes of the Geological Survey. Production figures follow:

	1919	1920
Gold	$4,541,502	$3,579,000
Silver (fine ounces)	6,863,580	7,786,000
Copper (lbs.)	52,331,175	55,790,000
Lead (lbs.)	15,349,370	19,510,000
Zinc (lbs.)	9,004,698	9,100,000

Silver increased in value from $7,687,210 in 1919 to approximately $8,480,000 in 1920. Copper, which increased in quantity, decreased in value from $9,733,599 in 1919 to $9,551,000 in 1920. The 1920 output was less than half of that of 1918. Lead production increased in value from $813,517 in 1919 to $1,592,000 in 1920, or nearly 100 per cent. The recoverable zinc output increased in value from $657,343 to $737,000.

NEW MEXICO.—Production in 1920 compares with that of 1919 as follows:

	1919	1920
Gold	$651,000	$476,000
Silver (fine ounces)	822,000	762,000
Copper (lbs.)	51,000,000	54,000,000
Lead (lbs.)	2,940,000	2,600,000
Zinc (lbs.)	8,000,000	11,840,000

These figures are based on the report of Charles W. Henderson of the Geological Survey.

OREGON.—Despite adverse conditions Oregon almost held its own in gold production. The 1920 output was estimated by Charles G. Yale at $912,200, a decrease of only $38,645 over 1919. The 1920 silver output was 199,940 ounces, an increase of 88,819 ounces over 1919. The copper production of 1920 was 2,300,000 pounds or about 85,000 pounds more than in 1919.

Mr. Yale regards the circumstance that the Oregon metal output has remained virtually stationary during a two year period of depression as an indication that it has reached its lowest point and that improvement may therefore be expected. Only seventy or eighty mines were producing at the end of the year as against between 150 and 200 which formerly showed an output from three to four times greater than that of 1920. High wages, expensive supplies, scarcity of labor and lack of water for mining and power all served as handicaps. Mr. Yale is of the opinion that normal conditions will see many of the idle mines in full blast again.

SOUTH DAKOTA.—The state's gold production in 1920 was $4,339,000 as compared with $4,862,586 in 1919, and $6,565,337 in 1918. Silver production was 68,035 ounces as against 115,522 ounces in 1919, according to the estimates of Charles W. Henderson of the Geological Survey.

UTAH.—The value of the five-metal output for 1920 was $46,000,000, a slight increase over 1919, according to Victor C. Heikes. Gold and copper decreased considerably, silver fell off slightly and lead and zinc increased. Here, as elsewhere, production was hampered by the high cost of mining, milling, smelting and refining, and in August the increased freight rate on ore and bullion presented another serious obstacle. Comparative figures for two years follow:

	1919	1920
Gold	$2,159,471	$1,949,000
Silver (fine ounces)	11,649,961	11,618,000
Copper (lbs.)	124,061,807	117,000,000
Lead (lbs.)	123,829,051	143,000,000
Zinc (lbs.)	4,431,024	6,000,000

More than half of the state's output of gold came from the Bingham District, about 30 per cent from the Tintic District and the remainder from Park City and other camps. Most of the gold production was obtained from siliceous, copper and lead ores treated at the smelting plants. The only considerable production by cyanidation was in Piute County. The silver output decreased in value from $13,047,956, in 1919, to $12,664,000, in 1920. Silver producers took advantage of the foreign market during the first five months of the year when the price was above one dollar per ounce and of the Pittman Act thereafter. The average price for the year was about $1.09 an ounce.

The 1920 price of copper was slightly less than that of 1919, hence the value of the output was decreased from $23,075,496 in 1919 to $19,991,000 in 1920. Most of the copper produced came from Bingham, where the monthly yield remained steady through the year at more than 9,000,000 pounds. Lead production increased in value from $6,562,940 to about $10,939,000.

The recoverable zinc output increased in value from $323,465 in 1919 to $487,000 in 1920.

WASHINGTON.—The value of the five-metal output for the year was approximately $1,193,000, an increase of $224,039 over that of 1919, according to C. N. Gerry. The decrease in gold and silver was more than offset by the increase in copper, lead and zinc. Production figures follow:

	1919	1920
Gold	$252,862	$142,000
Silver (fine ounces)	259,384	193,000
Copper (lbs.)	1,676,576	2,391,000
Lead (lbs.)	2,146,157	5,079,000

The value of the 1920 silver output was $210,000, a falling off of $80,510 from 1919. The copper output increased in value from $311,843 in 1919 to $409,000 in 1920. The lead output increased in value from $113,746 to about $415,000. Several hundred tons of zinc ore were shipped from the Northport district in 1920, marking the first large output of zinc in the state since 1917, when the Last Chance mine was operated.

CAN METAL MINING AGAIN RANK FIRST IN COLORADO?

LOW GRADE AND COMPLEX COLORADO ORES have been investigated by the United States Bureau of Mines and the Colorado School of Mines with a view to enabling metal mining to regain something of its former importance as the first industry of the state. The investigation, begun in January, 1920, was completed in December. A summary of work done and conclusions reached has been issued by the Bureau of Mines and a full report of results of field and laboratory work will soon be issued by the Colorado School of Mines.

The state of Colorado appropriated $15,000 for the work. Mining in the state now ranks below agriculture, live stock and manufacturing, its fall from first place being due partly to the decrease both in quantity and value of mineral production and partly to the rapid growth of other industries. The richer and more accessible ores having become largely exhausted, it was decided to determine the character and approximate extent of low grade and complex ores, and where these ores were obtained in sufficient quantity to conduct concentration tests at the Golden laboratories in an effort to devise a cheap and suitable treatment. It was thought that this might make available a large amount of low grade material left in the mines, on the dumps or in unworked deposits.

In preparing the preliminary program, the Bureau of Mines was represented by Dorsey A. Lyon, chief metallurgist and supervisor of stations, Dr. R. B. Moore, chief chemist, Dr. S. C. Lind, superintendent of the Golden station, and W. H. Coghill, metallurgist. The Colorado School of Mines was represented by Dr. V. C. Alderson, its president, J. C. Williams, assistant director of its experiment plant and several members of the faculty. General direction of the work was entrusted to Dr. Lind and Dr. Alderson. Cooperation during the investigations was vouchsafed by Horace E. Lunt, state mine commissioner; M. B. Tomblin, secretary of the Colorado Metal Mining Association, and State Senator J. G. Clattery. R. R. Hornor, mining engineer of the Bureau of Mines, conducted the field survey, assisted by B. C. Essig, representing the state. They visited each of the principal mining districts and studied mining and milling practices, the character of ores being mined and milled and the treatment of problems involved. Altogether, they took sixty-three ore samples and had them tested at Golden. The results of their investigations, together with conclusions and recommendations, are outlined in the following report by Messrs. Hornor and Coghill of the Bureau of Mines:

"The low-grade ores occur both as oxides and sulphides, the latter being the more abundant The sulphides are usually of complex nature and frequently consist of an intimate mixture of galena, sphalevite, pyrite, and chalcopyrite, together with the sulphantimonides and sulpharsenides of silver.

"In the Central City and Idaho Springs districts, in southern Gilpin County and northern Clear Creek County, the ores may be classified according to the predominating metals as gold-silver ores, copper ores, and uranium ores. The gold-silver ores may be grouped in three types—pyritic ore with some chalcopyrite, galena, sphalerite with pyrite and chalcopyrite, and composite ores intermediate between the first and second types. The veins are worked chiefly for gold and silver, and in some deposits, copper, lead and zinc are the important minerals.

"At Georgetown and adjacent districts in Clear Creek County, the ores are chiefly gold-bearing pyritic ore, and silver ores containing chiefly galena, blende, and pyrite.

"The marked decline in mining in Gilpin and Clear Creek Counties is due primarily to depletion of the richer ore-bodies, and impoverishment of ores with depth. To some extent the complexity of the ores and difficulties in treatment, with high costs of mining, freight rates and smelter rates, is responsible, but the chief cause is lack of ore. The mines offer little encouragement of finding important ore-bodies below depths already attained.

"Two methods of procedure are suggested as a possible means of helping the industry. The first is the establishment of central custom mills employing improved methods, for treating the complex ores. Such mills might best be owned and operated on a cooperative basis. The second is that careful and systematic prospecting be done along the strike, and in hanging and footwalls of the veins in those zones known to have contained rich ore bodies, in order to disclose deposits overlooked in early operations This work would be much more likely to disclose ore of commercial grade than any search in the zones opened by the various deep tunnels of the district, which in every instance have been disappointing and have not given the results predicted by their promoters.

"Leadville, in Lake County, is still unquestionably the premier mining district of the State. The bulk of Leadville's present production is sulphide ores, chiefly pyrite carrying gold and silver which are smelted direct. The second largest tonnage is of mixed sulphides of iron, lead, and zinc. The higher grade zinc ore is smelted direct but the lower grade and mixed sulphide is concentrated. Of the oxidized ores, iron oxide carrying manganese, and zinc oxide are the more important; oxidized lead ore forms only a small part of the production. These are smelted direct. Siliceous sulphide ores, carrying gold, silver and copper are mined in large quantities and either smelted direct or concentrated to eliminate silica.

"The milling of Leadville's low-grade sulphide ores has not been conducted locally with any degree of success, as various idle mills erected attest. Only one mill is now in operation, the Leadville District mill, which is treating siliceous pyritic ore. At the time of this survey, mining at Leadville was at the lowest ebb it has reached in many years. This depression may be attributed in part to high costs of operation, but the main cause is the inability to mine and treat at a profit, the low-grade and complex ores, both oxide and sulphides, of which large tonnages are known to exist, notably the low-grade oxidized silver ores on Fryer Hill, and the low-grade and mixed sulphides of lead, zinc, and iron on Carbonate Hill, Iron Hill. and Breese Hill. Granting that a cheap milling method can be worked out, cheaper methods of mining and handling the ores must be devised. To do this, mining on a large scale and consolidation of small units seems essential.

"The mining districts tributary to Breckenridge, Kokomo and Montezuma, in Summit County and Alma, in Park County, have in the past produced large quantities of the precious metals. Present mining is being done for the lead and zinc, which since 1909 have exceeded the value of gold and silver produced, indicating that mining in the future must depend on the base metals after depletion of the surface deposits carrying the precious metals.

"In the Bonanza district, in Saguache County, the ore being mined is sulphide ores carrying iron, lead, zinc and copper, with gold and silver tellurides and finely disseminated native silver. In the northern part of the district, lead-zinc-silver ores predominate, and in the southern, gold-copper ores. There is also a manganese belt in which manganese minerals are abundant. At some of the mines, notably the Rawley, there is a large tonnage of complex ore that would justify careful study of milling problems.

"In the mining region surrounding Aspen, in Pitkin County, the ores mined are chiefly silver sulphides associated with lead and zinc sulphides. The silver production has decreased to less than one-tenth what it was in early years. No estimate could be made of the approximate quantity of low-grade ore available, but, judging from the past history of the district, it is presumably large.

"Neither the Monarch-Garfield district, in southwestern Chaffee County, nor the Tomichi district in Gunnison County, have been large producers as compared with other districts; the Madonna mine at Monarch has been the star producer. These districts contain no ores that present unusual difficulty in treatment.

"The Creede district, in Mineral County, produces chiefly oxidized silver ore with a siliceous gangue, and a small amount of sulphide ore carrying lead, zinc, iron, silver, and gold. The oxidized ore is smelted direct. The high silica content is objectionable to the smelters, and ore below a certain grade is unmarketable, because of the high smelter charges and high freight rates. The principal reason for the decline of this district is the lack of ore of shipping grade. No reliable estimate can be formed of the amount of low grade or complex ores available.

"In the San Juan district, with the exception of Telluride, the ores mined are chiefly sulphide ores carrying silver, lead, zinc, and copper. In the early days of the district, the richer ores were smelted direct, later concentration mills were erected to treat the second-class ores. As the mines attained still greater depths, the deposits became barren or changed to ore of too low grade to work under the then existing conditions. In recent years the increased costs of mining and treatment, and higher freight rates has made working of the low grade ore impracticable.

"Telluride has always been a gold camp, with a small production of base metals. At first the ores were treated by stamp milling and cyanidation. With the exhaustion of the free milling ores, concentration became necessary, and the present practice is treatment by gravity concentration and flotation.

"With one or two exceptions, no large deposits of low-grade ore are known to exist in the San Juan district.

"The metallurgical work was under the direction of W. H. Coghill, metallurgist, assisted by C. O. Anderson, J. P. Bonardi, and Max Shapiro, of the Bureau of Mines, and J. C. Williams and E. V. Engels representing the State. The first steps was to make a careful physical examination of the ore, followed by chemical analysis to determine the content and character of the mineral present. If this showed that the valuable minerals present were so intimately associated or "locked" in the ore that they could not be readily separated, then methods of treatment were applied which experience had shown would be most likely to give the desired results. In all 29 of the ores submitted were examined and their amenability to concentration determined insofar as time permitted. The principal processes tried were flotation, gravity concentration, and cyanidation. The most promising results were obtained by using flotation combined with gravity concentration. Differential flotation, or flotation of one mineral in advance of another, to make a complete separation, is not applicable, except in rare instances, to Colorado complex ores.

"From the complex sulphide ores galena and the precious metals were recovered as far as possible by gravity concentration. To recover the finest grains of galena, the chalcopyrite and the remainder of the gold and silver means had to be devised to float them in advance of the sphalerite. Sodium sulphide was found to be a valuable reagent in this step. Results in the laboratory tests with sodium sulphide, and with an acid solution of sodium dichromate to grade up the zinc by flotation, have been so successful that they should receive further attention.

"The principal function of the dichromate was to remove the iron sulphide from the zinc, but it also removed some of the lead, silver, and gold.

"The oxidized ores were tested principally by cyanidation, but some flotation tests were made. Some of the ores were readily amenable to cyanidation; but others proved refractory. The work, on account of the limited time and the large number of ores examined, was necessarily of a cursory nature. In general, the results are encouraging, and detailed examination of the more promising ores is now justified."

GEORGE E. COLLINS RE-ELECTED GOVERNOR OF COLORADO CHAPTER

GEORGE M. TAYLOR was re-elected president of the Colorado Metal Mining Association at the annual meeting recently held. Other officers chosen were: Jesse F. McDonald, R. M. Henderson and Bulkeley Wells, vice-presidents; A. M. Collins, treasurer; and M. B. Tomblin, secretary.

Officers elected by the Colorado Chapter of the American Mining Congress are the following: George E. Collins, governor; J. F. Welborn, Charles A. Chase and George A. Stahl, vice-governors; A. M. Collins, treasurer; and M. B. Tomblin, secretary.

Legislation levying a special tax upon all mining property in Colorado for the benefit of the mining industry was recommended. The proposed special tax provides for the collection of one-tenth of one per cent on the assessed valuation of all metalliferous properties in the state, the money to be placed in a metal mining fund to be administered by a board of nine members appointed by the governor. Several Colorado state legislators attended the meeting and expressed approval of the bill.

Resolutions expressing disapproval of further "blue sky" legislation were voted down, and the committee considering such matters limited its recommendations to the enactment of constructive measures. Several of the delegates asserted that additional "blue sky" legislation would be unnecessary if the legislature would amend the present fraud law so as to protect investors adequately.

WESTERN PHOSPHATE PRODUCTION SHOWS HEALTHY INCREASE

THE NOTABLE FEATURE of the phosphate rock industry in 1920, according to the United States Geological Survey, Department of the Interior, was the increase in production in the Western States. The shipments from mines in Idaho ran from 2,000 to 3,500 tons a month in the early part of the year but were more than 8,000 tons in a single month after midsummer. About 20,000 tons was shipped before July, more than in any previous entire year. The total output of the Western States in 1920 is estimated at 65,000 tons, in comparison with 17,000 tons in 1919.

Shortage in the supply of freight cars hampered the industry in Tennessee, but the production of the old and some of the new companies was probably considerably greater than in 1919.

Operations on Florida phosphate were pushed throughout the year and the push made up in part for the loss caused by the long strike in 1919. The shipments from the pebble field were probably more than 2,000,000 tons, and it is estimated that the total shipments from the state were as great as those in the peak year, 1913, and may even have surpassed them. The demand for phosphate for exportation was good, and many shipments were made to northern Europe.

Total production of phosphate rock in the United States in 1920 was about 3,265,000 long tons, as compared with 2,249,000 tons in 1919.

ASBESTOS EXPLORATIONS IN THE WEST

THE U. S. GEOLOGICAL SURVEY hopes that the import of long-fiber asbestos from Canada, from which this country obtains the greater part of its high grade supply, will eventually be reduced by large deposits which may be found in the western states. The survey looks particularly to Arizona, where asbestos of especially long fiber and silky texture has been discovered.

In the Apache and San Carlos Indian reservations, in Arizona, asbestos is found associated with rocks known by geologists as the Apache group, which is made up of several formations. The principal deposits are in the Salt River region, where the Apache group is represented chiefly by beds of quartzite and limestone, which are at many places invaded by diabase, an igneous rock. Throughout this area much diabase has been injected into beds of limestone, and the asbestos is found near the contact of the limestone with the diabase. Places where the limestone has been much broken by the diabase have been particularly favorable for the formation of asbestos. The asbestos is invariably associated with serpentine, a greenish mineral that is in some deposits in other regions mottled like a serpent's skin, and although serpentine occurs at many places without asbestos, serpentine "float" fragments of it that lie loose on the surface, having been washed out from its outcrop, are a valuable aid to the prospector for asbestos. In this region, asbestos itself also is generally found as float for a considerable distance below its outcrop.

TEXAS.—Metal production for the year was 520,000 ounces of silver and small amounts of gold, lead and copper, according to Charles W. Henderson. The silver mine at Shafter was in operation throughout the year.

THE SETTLEMENT OF FEDERAL TAXES FOR PAST YEARS

By Robert N. Miller

THE CRYING PRESENT NEED of every business of every kind is to find out once and for all what its tax bill to date is. At the present moment there is hardly a single corporate taxpayer that is sure all its tax is paid. The suspense in some cases is destructive of opportunity and fatal to successful operation. Delayed audits make it difficult for the banks of the country to be sure of the net worth of any business, since it is not uncommon for an additional assessment to wipe out an apparent surplus and disclose an actual impairment of capital. The department realizes these difficulties. This need can not be supplied without Congressional action; to my mind three measures would be serviceable towards producing the necessary result:

First, enact the proposed provision by which settlements reached between the taxpayer and commissioner may be made final and binding, both on the taxpayer and the government, unless actual fraud has been practised. Under present laws, the commissioner is required to reopen any case when he receives information tending to show a higher tax than has been assessed. New decisions of courts, or information received by the commissioner in the assessment of one corporation, casting light on the income received by another corporation or by individuals, may require additional assessment and examination after a case has been apparently closed. The provision for final settlement would have the virtue of making it possible for a taxpayer to be sure that his taxes for a certain year are finally and definitely paid and disposed of.

ROBERT N. MILLER

Formerly Solicitor of Internal Revenue

Second, provide for the commissioner of internal revenue sufficient funds to pay salaries to attract and hold an adequate number of men capable of dealing with these difficult questions with confidence and self-reliance. Decisive and broad-minded action cannot be secured in any business without paying for it. Men who have the knowledge and experience to carry such responsibility do not have to hunt for jobs. Such men are pursued by people who want to employ them. There are men in the work of the department who rank favorably in ability with the ablest accountants and technical men in the United States. In the legal department there are lawyers of first-rate ability. These men are underpaid, and are constantly receiving offers of salaries in multiples of what they earn now. Sooner or later they leave the service, and the new man requires nearly a year to get his bearings. They ought to be paid enought to make them stay. To collect and check four billions in taxes each year under a law as complicated as this, takes not only good men, but many of them, and that takes money. In my judgment, this policy would be so efficient in the collection of taxes from those who under the law are liable that the present economical administration of the law—approximately 53 cents to collect $100.00—could still be maintained. An important and valuable suggestion has been made by the leading tax men in the American Mining Congress—to establish a settlement board to assist in the settlement of cases under the proposed compromise provision just outlined for cases arising for the war period—the board to be of a temporary character, and to be composed of representative citizens of demonstrated judgment and ability, chosen for their fitness alone, and compensated on a basis which will prevent their service from involving too great a sacrifice. But this board could function only on a foundation of adequate salaries to keep men in the unit, because it would need accurate technical information on a case before it could begin to function.

Third, provide a tax court of appeals, where questions of law, arising under taxing acts, shall be promptly decided. Under present systems, there are nine courts of appeal, no one of them binding on the other, to which tax questions can go. Their views differ, and there is no unified authority short of the already overburdened Supreme Court. A tax court of appeals would unify the appeals in a single court having the time and undivided attention to build up a special knowledge of business problems, and to decide the questions as they arise. Such a court should be provided with such technical assistance as would enable it adequately to study the whole field.

The delays and denials, the uncertainties and the harshnesses, under which the taxpayers have suffered so grievously are due, primarily, to the unexampled difficulties of the problem. So far Congress has not given to the commissioner of internal revenue, or to any one else, the power to decide what tax would be fair for each taxpayer. It has given him the task of administering a law which, with a few exceptions, is laid down unchangeably. And if Congress had given the incumbent of that office the opportunity of being a despot of that kind, in the hope that the despotism would be benevolent, the task of deciding what is "fair", aside from principle, would have proved almost impossible. Any one who says a desperately complicated law on a desperately complicated subject can be simply administered does not understand the problem. To train a Washington force to deal with many millions of highly involved tax returns each year is in itself a tremendous task; the task of keeping the field agents—who necessarily work in small groups all over the country—fully up to date on the thousand questions of contruction, is much harder, although most of them are eager students.

Taking the situation as it is, rather than as it would be under different laws and lower tax rates, the wise taxpayer will seek sympathetically to study the position of the department, as well as his own case, and will succeed where others fail by presenting his case so that his arguments fit in with the other decisions the department must make.

However well informed the department is as to general theory and the particular facts of any case, the taxpayer in presenting his question ought to know still more about the theory of the law as applied to that particular case, and ought to know more about the facts of his own case than the department does at the outset. In a question which depends on what your statutory income is and what your statutory invested capital is, who ought to know more about it than yourself? And the department welcomes such knowledge—just as the best qualified judge expects lawyers in the case to know more about it—at the beginning—than the judge, and would be surprised at any lawyer who started out by asking the court what questions were involved and how they ought to be presented.

To dig through a thousand facts for the hundred which may show that your income or capital is abnormal is not a task that can be performed at a single sitting. A man who knows the particular business, and a man who understands the spirit of the provisions, must work together for a considerable time, in many cases, to sift the facts, eliminate the immaterial and assemble the really material facts in definite and compact form. The government desires to get the right answer; it will do all it can to dig out the facts which are favorable to the taxpayer, as well as to the others; but it is hardly reasonable to rely entirely on the government when the law has put the burden on you to do this long task of finding the evidence which you need. The practical truth of this is easily realized when we understand that each government auditor is likely to have piled up in his incoming basket a stack of files representing the problems of other taxpayers who are clamoring for attention.

In presenting his case to the bureau the taxpayer must be ready not only to show that his case is a just one, but he must be able to show also that it comes within a general rule which the department can safely follow without causing trouble in other cases and without violating the text of the law or fundamental principles which have already been recognized by the bureau. Every principle, consistently carried out, operates favorably to some taxpayers and unfavorably to others, but the department, of course, can have only one rule on the same principle. A single example: In a certain class of expenditures which are in the twilight zone between capital expenditures and business expenses, one group of taxpayers, who are not interested in excess profits taxes, are likely to contend that they are deductible expenses, diminishing income, while another class of taxpayers who need a substantial invested capital will contend that such expenditure should only be regarded as of a capital nature. The ultimate decision as to the deductibility of the items will work unfavorably to one of these taxpayers or another, and that taxpayer who succeeds will do so not on the ground of what is fair to him but because he has brought his case within the general principle which the government finds tenable in the light of experience and court decisions.

Especially is it worth while to analyze the decisions of courts so far as they construe regulations and rulings. Since 1909 there have been about 220 income tax decisions (including constructions of the corporation excise tax law). Nearly one-third of these have been decided the last fourteen months and the volume of these precedents is growing all the time. Incidentally, it is interesting to know that of sixty-three cases decided during a year, seventeen were under the corporations excise tax law, though involving general principles, forty related to income taxes imposed by later laws and four involved excess profits taxes. The department is especially interested in the bearing these current decisions have on any pending question.

Abandonment of the excess profits tax will remove many difficult questions for future years, yet as long as the United States must raise by taxation as much as three or four billions, the determination of tax liability, whatever the basis of the tax or the terms of the law, will involve serious and complicated problems.

The question is sometimes asked whether it is advisable for a taxpayer having business with the bureau to secure an introduction by some friend or acquaintance prominent in Washington. This is not necessary or even desirable. The best and only way to secure a favorable ruling from the department is to prepare the case thoroughly on the law and facts with a clear understanding of the particular issues on which the case will turn. If the case is so prepared it will receive the most careful attention. Any action which might be construed as the exercise of influence from any source is certain to be regarded by the auditors as an admission that the case is not a strong one on its merits.

When a taxpayer receives a letter from the bureau notifying him that additional taxes will be assessed, and it is felt that the additional assessment is not warranted, the taxpayer merely by writing promptly to the commissioner at Washington may get an appointment in Washington, prior to assessment, at which the details can be learned and any additional points of law and fact urged by the taxpayer or his representative. And if the income tax unit should refuse to make the adjustment desired provision is made by which the taxpayer can secure a hearing before an appeal committee, sitting with attorneys from the office of the solicitor of internal revenue or the solicitor himself, before whom a full presentation of facts and legal arguments can be made. If this process of appeal requires time, the assessment frequently goes forward, but a claim in abatement usually defers payment until the question is decided.

Even where a taxpayer has failed to reply promptly to a letter announcing an intention to assess additional tax and has delayed until an assessment is in the hands of the local collector for inforcement, the bureau has so arranged that, if he believes the additional tax is not correct, he may in every bona fide case secure a hearing and, if desired, a second consideration by the committee, and in nearly every case without paying the disputed tax until adjudicaton.

Hearings before the committee have the advantage, essential in any true appeal, that the committee comes to the question with fresh minds. Much depends upon retaining on the committee, or securing on any body which may supplement it, fully qualified men of broad viewpoint and the necessary knowledge of the problems of different industries.

A very practical question is: If these methods by which cases can be concluded are so well worked out, why are many of our returns still unaudited, and why are we kept in the dark as to whether we owe the government or the government owes us? The answer has been indicated —lack of power to settle finally, and lack of appropriation to hold the good experienced men or to secure the services of new men of broad knowledge. Help on these points will go far to solve the problem. Settling the salaries question will solve another important problem: the need for decentralization, which must be delayed until the Washington office is stabilized.

We cannot, in my belief, afford to cut expenses in the administration of the tax law, but in other government expenditures substantial reductions seem possible. The greatest hope for tax relief lies in that; if our government does not spend so much, it will not have to collect so much in taxes. There is here a great and difficult field for constructive statesmanship; whoever can diminish the annual expenditure of the government will earn the fervent gratitude of his fellow citizens.

SECONDARY BOYCOTT AND SYMPATHETIC STRIKE HELD TO BE UNLAWFUL

BY A VOTE OF SIX TO THREE, the Supreme Court of the United States decreed that the Clayton Act did not authorize labor unions to conspire to restrain trade in violation of the anti-trust laws, and did not authorize them to conduct secondary boycotts or sympathetic strikes or to make the public suffer as a means of winning industrial battles, or to do anything else in itself unlawful.

The case was that of the Duplex Printing Press Company of Battle Creek, Michigan, against business agents of the International Association of Machinists. The printing press company employs less than two hundred and fifty men. The machinists' union called a strike, but only about fourteen men went out and the company continued doing business. Then the international union began a secondary boycott, nation-wide in its scope but particularly intensive in New York, where the company's business was heaviest. The company, in the federal district court of southern New York, sought an injunction and failed to get it, took the case to the circuit court of appeals, and again lost, whereupon it appealed to the Supreme Court of the United States, which reversed the decrees of the lower courts and remanded the case to the district court with instructions to grant the relief sought.

The Supreme Court in its opinion dealt specifically with Section 6 of the Clayton Act, which, with Section 20, has usually been construed by labor leaders as permitting members of unions to do things which it would be unlawful for others to do. Upon Section 6, the court had the following to say:

"The section assumes the normal objects of a labor organization to be legitimate, and declares that nothing in the anti-trust laws shall be construed to forbid the existence and operation of such organizations or to forbid their members from lawfully carrying out their legitimate objects; and that such an organization shall not be held in itself—merely because of its existence and operation—to be an illegal combination or conspiracy in restraint of trade. But there is nothing in the section to exempt such an organization or its members from accountability where it or they depart from its normal and legitimate objects and engage in an actual combination or conspiracy in restraint of trade. And by no fair or permissible construction can it be taken as authorizing any activity otherwise unlawful, or enabling a normally lawful organization to become a cloak for an illegal combination or conspiracy in restraint of trade as defined by the anti-trust laws."

The words "lawfully" and "legitimate" are emphasized by italics in the Supreme Court's decision, and the court's references to Section 20 of the Clayton Act stress the point that the measure was not intended to permit unions to do anything not "lawful" and "legitimate." To substantiate its own interpretation, the court considered the manifest intention of the lawmakers who enacted the Clayton Act. Extracts from this part of the Supreme Court decision follow:

"By repeated decisions of this court it has come to be well established that the debates in Congress expressive of the views and motives of individual members are not a safe guide, and hence may not be resorted to, in ascertaining the meaning and purpose of the law-making body. But reports of committees of House or Senate stand upon a more solid footing, and may be regarded as an exposition of the legislative intent in a case where otherwise the meaning of a statute is obscure. And this has been extended to include explanatory statements in the nature of a supplemental report made by the committee member in charge of a bill in course of passage.

"In the case of the Clayton Act, the printed committee reports . . . contain extracts from judicial opinions and a then recent textbook sustaining the 'primary boycott', and expressing an adverse view as to the secondary or coercive boycott . . .

"Moreover, the report was supplemented in this regard by the spokesman of the House committee (Mr. Webb) who had the bill in charge when it was under consideration by the House. The question whether the bill legalized the secondary boycott having been raised, it was emphatically and unequivocally answered by him in the negative.

"The present case furnishes an apt and convincing example. An ordinary controversy in a manufacturing establishment, said to concern the terms or conditions of employment there, has been held a sufficient occasion for imposing a general embargo upon the products of the establishment and a nation-wide blockade of the channels of interstate commerce against them, carried out by inciting sympathetic strikes and a secondary boycott against complainant's customers, to the great and incalculable damage of many innocent people far removed from any connection with or control over the original and actual dispute—people constituting, indeed, the general public upon whom the cost must ultimately fall, and whose vital interest in unobstructed commerce constituted the prime and paramount concern of Congress in enacting the anti-trust laws, of which the section under consideration forms after all a part."

The court thereupon decreed as follows:

"There should be an injunction against defendants and the associations represented by them, and all members of those associations, restraining them, according to the prayer of the bill, from interfering or attempting to interfere with the sale, transportation, or delivery in interstate commerce of any printing press or presses manufactured by complainant, or the transportation, carting, installation, use, operation, exhibition, display, or repairing of any such press or presses, or the performance of any contract or contracts made by complainant respecting the sale, transportation, delivery, or installation of any such press or presses, by causing or threatening to cause loss, damage, trouble, or inconvenience to any person, firm, or corporation concerned in the purchase, transportation, carting, installation, use, operation, exhibition, display, or repairing of any such press or presses, or the performance of any such contract or contracts; and also and especially from using any force, threats, command, direction, or even persuasion with the object or having the effect of causing any person or persons to decline employment, cease employment, or not seek employment, or to refrain from work or cease working under any person, firm, or corporation being a purchaser or prospective purchaser of any printing press or presses from complainant, or engaged in hauling, carting, delivering, installing, handling, using, operating, or repairing any such press or presses for any customer of complainant. Other threatened conduct by defendants or the associations they represent, or the members of such associations, in furtherance of the secondary boycott should be included in the injunction according to the proofs."

Sodium in 1919

A TOTAL OF 7,093,138 tons of sodium salts valued at $28,165,901 was produced from natural resources in the United States in 1919. Production was somewhat lighter than in 1918, with its 7,262,797 tons, but the value of output was greater, the 1919 figures being $27,933,149. The Geological Survey's figures for 1919 are divided as follows: Salt in brine, 2,809,000 tons; rock salt, 1,637,300 tons; evaporated salt 2,618,200 tons; sodium carbonate, sodium bicarbonate, sodium sulphate and borax, 28,638 tons.

Sodium salt importations during 1910 for domestic consumption totaled 1,044,713,473 pounds valued at at $20,703,514, as compared with 1918 importations aggregating 4,223,449,559 pounds with a value of $90,939,431. Exportations of domestic sodium salts in 1919 aggregated $18,545,420 as compared with $22,291,735 in 1918. Foreign sodium salts exportations in 1919 totaled $387,090 as compared with $73,402 in 1918.

INCREASES IN OUTPUT OF ANTHRACITE AND BITUMINOUS DURING 1920

PRODUCTION OF BITUMINOUS coal in 1920 totalled 556,516,000 net tons, according to figures of the Geological Survey, which may later be revised. This is an estimate based on records of shipments over the principal coal-carrying roads, and will be revised upon receipt of figures from certain of the railroads covering shipments during the last week of the year. The margin of error will probably not exceed 2 per cent and may be considerably less. The year's production was 98,153,000 tons greater than that of 1919.

The average output per working day during the year was 1,805,000 tons as compared with 1,485,000 during 1919, 1,180,000 during 1918, and 1,794,000 during 1917. The total production during the three preceding years was: 458,063,000 tons during 1919; 579,386,000 during 1918, and 551,790,000 during 1917.

Preliminary estimates also based on reports of cars loaded indicate a total production of anthracite for the calendar year 1920, including mine fuel and sales to local trade, of 89,100,000 net tons. This was an increase of 1,000,000 tons or 1.1 per cent over 1919. Production during the four preceding years was: 1919, 88,000,000 tons; 1918, 99,000,000 tons; 1917, 100,000,000 tons; and 1916, 88,000,000 tons.

ANTHRACITE shipments for the year just closed, with December estimated, are given by the Anthracite Bureau of Information, Philadelphia, as follows:

	Tons.
January	5,868,835
February	5,046,483
March	6,077,821
April	4,814,211
May	6,155,878
June	6,319,957
July	6,389,100
August	6,207,653
September	3,592,954
October	6,240,901
November	5,765,347
December	6,250,000
Total	68,729,140

Production of all coal during the year just closed was approximately 646,000,000, or 100,000,000 tons more than during 1919. This was 6,000,000 tons less than 1917 and 32,000,000 less than 1918, but far greater than 1916, when the total was only 591,000,000.

The beehive coke production during 1920 was 20,833,000 net tons as compared with 19,950,000 tons during 1919, or an increase of 6 per cent.

FEWER MINE FATALITIES

A MARKED DECREASE in the number of fatal accidents was one of the outstanding features of the coal mining industry in 1920. Reports of state mine inspectors for the first eleven months of the year, received and consolidated by the Bureau of Mines, showed that 1,983 men lost their lives through mine accidents, as compared with 2,146 during the parallel period of 1919.

The decrease in fatalities due to explosives was 87, or 44.2 per cent, as compared with 1919. This was the most notable decrease of the year. Accidents caused by gas and coal dust explosions showed a decrease of 34 fatalities, or 19.3 per cent. There was a reduction of 31 fatalities, or 25.4 per cent, in miscellaneous accidents underground. There was practically no change in the number of accidents due to falls of roof and coal. Haulage accidents above ground showed a decrease of 16 fatalities, or 19.3 per cent. There was a slight increase in the number of accidents caused by electricity.

Seven mine disasters in each of which five or more men were killed characterized the year. From these disasters 49 deaths resulted as compared with 201 during the preceding year.

Coal mine fatalities during the two years are shown by months in the table printed elsewhere on this page.

The reduction in coal mine fatalities during the calendar year 1920 was especially gratifying in view of the fact that it was accompanied by an increase of more than 16 per cent in the output of coal. The number of lives lost for each million tons of coal produced, according to calculations of the United States Bureau of Mines, was 3.39 in 1920 as compared with 4.28 in 1919.

COAL-MINE FATALITIES, BY MONTHS, 1919-1920.

	1919	1920
January	183	199
February	160	153
March	171	171
April	189	157
May	185	167
June	295	212
July	222	196
August	223	185
September	179	188
October	241	190
November	95	162
December	171	
Total	2,317	1,983

U. S. COAL BILLS GO UNPAID

Government Departments do not pay their coal bills promptly, if the experience of Dr. F. G. Cottrell while he was director of the Bureau of Mines can be taken as a criterion. Dr. Cottrell told a subcommittee of the House Committee on Appropriations that the departments during one month of last year owed the government fuel yards approximately one million dollars and that they still owed $747,097.30 on their October accounts after the Bureau of Mines had paid producers everything owing to them except $100,765.59.

The government fuel yards have a working capital of $1,154,088. "If the departments would pay their bills promptly and by checks instead of transfer warrants, which seem to require so much time, the working capital could be greatly reduced," Dr. Cottrell said.

The yards handled 269,000 tons of coal in Washington last year. This coal cost $1,674,147.14 f.o.b. Washington, and was sold for $1,904,071.51, leaving a gross profit of $229,924.37. The difference covered all expenses, such as overhead, yard, garage and trucking expenditures, and amounted to $1.138 per ton handled.

The fuel yards deliver coal at eight-hundred places, handling from forty to fifty cars daily. About 250,000 tons of anthracite and 25,000 tons of bituminous are handled yearly. Great difficulty was experienced by the yards in getting fuel last year, but it is now rolling into the yards as fast as it can be handled and orders are being sought by shippers.

ALASKAN COAL NOT DELIVERED.

REPRESENTATIVE M'FADDEN of Pennsylvania said in the House recently that coal was not being delivered by the Alaskan Railroad as had been promised during discussion in the House of the bill providing for construction of the road. He asserted "that nobody has seen a pound of the coal which was to be brought down in large quantities to Seattle" and that the Navy was burning oil or buying coal from England at from $25 to $30 per ton, but was not getting anything from Alaska.

Representative Miller of Washington came to the defense of the railroad, saying that facilities were being installed which would result in the delivery of coal to tidewater for use of the navy. At no distant date, he said, the Pacific Fleet would use some of the finest coal produced, and it would come from Alaska.

Wholesalers' Counsel Holds Seizures Of Contract Coal Illegal.

CONFISCATION BY RAILROADS of coal shipped under definite contract price is illegal, in the opinion of Gibbs L. Baker, general counsel of the Wholesale Coal Trade Association of New York. When several association members complained that during the last few weeks of December certain carriers failed to make proper settlement for confiscations, Mr. Baker was asked for an opinion. His decision in part, follows:

"The preliminary question to be first disposed of is whether the carriers in confiscating or diverting coal were acting pursuant to authority duly vested in them or whether the taking or diversion was duly authorized. With the termination of federal control on March 1, 1920, all right to exercise the broad powers provided in the Lever Act ceased to exist. There was no continuation or extension of the anthority originally vested in the Railroad Administration to the respective carriers at the time of their release from federal control. The Lever Act was designed for the aid of and support of governmental agencies and cannot be held to support acts of confiscation or diversion by private concerns. It is, therefore, our opinion that any seizure by the railroads is entirely illegal and to be defended on no grounds whatsoever. The sole ground of necessity which, no doubt, has prompted the carriers to exercise the power of confiscation and diversion is not sufficient ground, we submit, for altering the common law rule as to the damages recoverable.

"Our opinion, therefore, briefly stated, is that where dealers enter into contracts for the delivery of coal at a definite fixed price and consign shipments of coal for delivery under the agreements previously entered into, the confiscation or diver ion of such coal by the carriers constitutes a violation of property rights (indisputably protected by the Constitution of the United States) for which damages as evidenced by the contract price are properly recoverable."

Coal Offered Shipping Board at Lower Prices.

COAL IN ABUNDANCE, and at reduced prices, was offered on January 14 to the U. S. Shipping Board, which three weeks previously had rejected all of the bids submitted for the next year. The average price was $7.50 per ton, or one dollar less than the previous bids, and the total offerings aggregated 15,250,000 tons, as against 2,000,000 offered at the first bidding. Fifty-four companies submitted eighty-seven bids.

Bituminous Margin 71 Cents Per Ton.

Bituminous sales prices, per net ton at the mines, averaged $3.47 between January and October, 1920, according to returns of 494 companies made to and announced by the National Coal Association. The average cost per ton was $2.76, leaving the producer a margin of seventy-one cents per ton, out of which he had to pay interest and taxes. The average margin of profit was about thirty-five cents per ton.

SALT LAKE ASSAY OFFICE SAVED; DEADWOOD OFFICE LOST.

NO APPROPRIATION for the assay office at Deadwood, S. D., was included in the Sundry Civil Appropriation Bill as it passed the House of Representatives, and it was only after a determined fight that any provision in behalf of the Salt Lake assay office was made.

The Appropriations Committee proposed to eliminate both offices but Western congressmen put up a strong defence. Committee members said the offices were established many years ago, were useless and should be abolished. During the session of the House as a Committee of the Whole, Representative Gandy, of South Dakota, was defeated, twenty-eight to thirty-five, in his efforts to have the Deadwood office provided for, but Representative Mays, of Utah, succeeded by a vote of ninety-six to ninety-two in retaining the Salt Lake office.

Mr. Gandy argued that the Deadwood office had served a useful purpose in the mining industry for twenty years when in 1914 reduced appropriations forced the mint service to notify the largest gold companies of the Black Hills district that it could no longer accept their bullion, since which time bullion has been sent to the Philadelphia mint. He said the Deadwood office had made more assays for ore, for gold and silver than any other office. It had received 179 deposits of bullion last year, which was remarkable in view of the situation confronting the gold mining industry. He said a great number of smaller gold mining companies were at a standstill or would be driven out of business if conditions did not change or relief come through some action by Congress.

Representative Wood, of Indiana, said that while the Treasury had not recommended abolition of the Deadwood office, it realized it was useless, and he referred to the elimination by Congress of sub-treasuries without recommendation from the Treasury Department. He said more gold was assayed in Alaska in a month than in South Dakota in a year and yet there was no assay office in Alaska. The same conditions applied to New Mexico and Arizona. He declared the office was operated at a loss to the government and there were other ways to get assays. Representative Raker opposed discontinuing the office, saying it and other assay offices had demonstrated that they were necessary.

Speaking for the Salt Lake office Representative Mays quoted the Director of the Mint to the effect that assay offices were of benefit to prospectors and developers. The director had stated that at present the mining industry is dormant owing to lack of prospectors bringing in new mining country and that there must be an incentive to the prospector to develop new territory. Mr. Mays said more ore was produced and smelted in Salt Lake County than anywhere else in the world, and that the miners and prospectors asked that the office be continued. He said that during the war Utah had paid $100,000,000 into the Treasury, mostly from her mines. Since the establishment of the office fourteen years ago it had done valuable work and the state's output of minerals had increased four or five fold. He charged that the abolition of the office was an attempt to discourage the mining industry. He referred to the critical situation with reference to the gold standard. He said the assay offices which the committee had retained had fewer assays to their credit than those which it was proposed to abolish. He read a letter from the Salt Lake Commercial Club saying activities in mining were at a low ebb, that there was nothing of greater value to mining development than the assay office, and that the abolition of the Salt Lake Office would mean a great loss to prospectors and small miners as they could not send samples to San Francisco or Denver. Mr. Mays said an ex-soldier had one sample assayed at Salt Lake which resulted in the development of a mine which netted the government $250,000 in income taxes.

Mr. Mays also read a letter from the Utah Chapter of the American Mining Congress saying the assay office was of great service to prospectors and small operators; that there were no refineries at Salt Lake and no place except the assay office where small lots could be disposed of; that the office served Utah, Nevada and Idaho; that it made mineral tests for other government departments, such as assays of counterfeit coin for the secret service, tests for the land office, geological survey and forest service; and that the office gave a stimulus to much needed gold prospecting.

Mr. Mays said nineteen million acres of land were unsurveyed and unclassified as to mineral content and the Geological Survey was coming to the assay office continually for assays of ore samples to determine the character of the land.

Representative Wood said the Salt Lake office was more of a liability than the Deadwood office, that its importance was declining faster than Deadwood, and that both offices were created years ago without justification.

Notwithstanding the fact that the congressmen, in session as a Committee of the Whole, voted to retain the Salt Lake office, another effort to effect its elimination was made when the House voted on the appropriation measure. This was the only provision in the entire measure which was voted on again. The count was 152 to 124 in favor of retention of the appropriation for the office.

PROSPEROUS YEAR FOR IRON ORE

IRON ORE MINED in the United States in 1920, exclusive of that containing more than 5.5 per cent of manganese, totalled 67,773,000 tons, or an increase of 12 per cent over the 1919 output. Shipments aggregated 69,558,000 gross tons valued at $290,607,000, or an increase over 1919 of approximately 24 per cent in quantity and 43 per cent in value.

The year's production was exceeded in quantity only by that of 1916, 1917 and 1918 and was less than 2,000,000 tons below that of the latter. Shipments for 1920 exceed gross production by approximately 1,785,000 tons, whereas in 1919 production had exceeded shipments by 4,147,000 tons.

This record, which is calculated from preliminary figures furnished the Geological Survey by producers of 97 per cent of the normal output, is considered altogether remarkable in view of obstacles placed in the path of producers during the year. Among the troubles of the year were the strike of dock ore handlers, railroad tie-ups due to strikes and fuel shortages, and the cessation of demand on account of the closing down of blast furnaces.

Lake Superior district producers led the country, furnishing 86 per cent of output and shipments. The district's shipments were approximately 24 per cent greater than 1919 and its output 12 per cent more than that of 1919. The increased value of ore shipped was 43 per cent. Minnesota mines furnished 67 per cent of the Lake Superior district's shipments and 58 per cent of the shipment of the entire country. Michigan mines furnished 31 per cent of Lake shipments and 27 per cent of the country's shipments.

Southeastern states, which include the Birmingham and Chattanooga districts and constitute the second largest iron ore producing area in the United States, increased their output 16 per cent, their shipments 18 per cent and their gross income from shipments 32 per cent over 1919.

Shipments from the Northeastern states exceeded production by 43,000 tons. Production and shipments were identical in the case of the Western states, and in other states shipments were approximately 1,800,000 tons greater than production.

Production for 1919 and 1920, and shipments and value of shipments in 1920, are shown in the following tables:

District	*Ore mined (gross tons)* 1919	1920
Lake Superior:		
Michigan	15,471,000	17,232,000
Minnesota	35,767,000	39,964,000
Wisconsin	888,000	977,000
	52,126,000	58,173,000
Southern States:		
Alabama	5,034,000	5,850,000
Georgia	80,000	89,000
North Carolina	67,000	69,000
Tennessee	271,000	347,000
Virginia	288,000	308,000
	5,740,000	6,663,000
Northwestern States:		
New Jersey	409,000	420,000
New York	858,000	927,000
Pennsylvania	547,000	680,000
	1,811,000	2,027,000
Western States:		
Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Washington, and Wyoming	678,000	734,000
Other States:		
Connecticut, Maryland, Massachusetts, Missouri, and Texas	108,000	176,000
Grand total	60,466,000	67,773,000

District	1920 *Quantity (gross tons)*	*Value*
Lake Superior:		
Michigan	18,715,000	$83,628,000
Minnesota	40,274,000	169,654,000
Wisconsin	1,067,000	4,261,000
	60,056,000	$257,543,000
Southern States:		
Alabama	5,769,000	17,903,000
Georgia	94,000	474,000
North Carolina	69,000	256,000
Tennessee	347,000	1,243,000
Virginia	296,000	1,118,000
	6.575,000	$20,994,000
Northeastern States:		
New Jersey	417,000	2,592,000
New York	978,000	6,482,000
Pennsylvania	675,000	1,138,000
	2,070,000	$10,212.000
Western States:		
Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Washington, and Wyoming	734,000	1,314,000
Other States:		
Connecticut, Maryland, Massachusetts, Missouri, and Texas	123,000	514,000
Grand total	69,558,000	$290,607,000

Labor Leaders Called To Discuss Legislative Matters

The American Federation of Labor has called a conference of representatives of 109 unions to be held in Washington February 23 to plan a campaign against wage reductions, anti-strike and compulsory arbitration laws and certain kinds of injunction measures. It is possible that they will also discuss the establishment of cooperative stores throughout the country, the stores to eventually handle all food, fuel and clothing necessities.

HOUSE COMMITTEE DEALS RUTHLESSLY WITH BUDGET ESTIMATES

FUNDS FOR THE BUREAU OF MINES and other government departments in which the mining industry is concerned will be considerably less during the next fiscal year than the budgets prepared by the heads of departments call for, if the measure prepared by the House Committee on Appropriations is finally adopted. And the prospects are that the measure will be adopted with very few changes.

The budget of the Bureau of Mines was cut by the committee from $3,469,638 to $1,357,300—a reduction of $2,112,338 over 1922 estimates and only $54,658 over appropriations for the current year. Geological Survey estimates were cut from $2,469,140 to $1,605,620, which amount is $125,080 less than appropriations for the current year and $863,520 less than estimates. Reclamation Service estimates were cut from $26,086,000 to $20,277,000, which latter figure still amounts to $11,803,000 more than current year appropriations, although $5,809,000 less than 1922 estimates. The Appropriations Committee pointed out that the Reclamation Service would probably receive $15,000,000 from oil and gas operations under the leasing law by July 1, 1922.

Bureau of Mines appropriations recommended by the committee are: General expense, $76,900; mine explosion investigations, $409,065; investigation of mineral fuels and unfinished mineral products, $142,510; investigations of ores and mineral substances, $125,000; petroleum and natural gas investigations, $135,000; expenses of mining experiment stations, $200,000; maintenance of buildings at Pittsburgh station, $50,000; operation of mine rescue cars, $160,000; inspections under the leasing bill, $50,000, for which $132,000 was estimated.

The committee declined to grant the following estimates; federal inspection of fuel, $725,000; uniform selection in purchase of government fuel, $75,000; Building for Fairbanks, Alaska, experiment station, $75,000.

No Money For New Investigations

The budget item of $725,000 for Federal inspection of fuel hit a healthy snag—the snag consisting of the committee's unexpected development of opposition to all appropriations for investigations not already authorized Heretofore the Appropriations Committee has made liberal allowances for new work, but this year its members insist that all such projects must be first considered by the committee having jurisdiction. Under this state of affairs, federal inspection of fuel must first be considered and authorized by the Committee on Mines and mining. Another important outcome of this ruling is that in the future all such projects will be subject to public hearing, and the former practice of hearing government officials only, and in private, will go into the discard.

Mints and Assay Offices

Detailed appropriations for mints and assay offices, as recommended by the Committee, are as follows: Denver mint—salaries, $44,800, decrease of $1,200 from this year and decrease of $2,100 from estimates; wages of workmen, $110,000, which is the same as the current appropriation and the estimate; incidental and continued expenses, $90,000, which is the same as current appropriation and estimate; New Orleans mint—salaries, $5,500, decrease, $400; wages of workmen, $6,250, no change; incidental expenses, $2,000, decrease, $650; Philadelphia mint—salaries, $68,600, decrease, $4,600; wages of workmen, $350,000, decrease of $90,000; incidental expenses, $140,000, decrease, $37,000; San Francisco mint—salaries, $48,400, decrease, $7,200; wages of workmen, $200,000, no change; incidental expenses, $75,000, no change. Boise, Idaho, assay office—salaries, $4,200, decrease, $1,200; wages of workmen, $2,000, and incidental expenses, $1,300, no changes. Helena, Montana, assay office—salaries, $4,400, decrease, $1,000; wages of workmen, $2,500, decrease, $500, incidental expenses, $1,600, no change. New York assay office—salaries, $53,400, decrease, $6,850; wages of workmen, $145,200, decrease $24,000; incidental expenses, $115,500, decrease $34,500. Seattle, Washington, assay office—salaries, $11,450, decrease $1,100; wages of workmen, $15,000, decrease $2,200; incidental expenses, $5,700, decrease $300.

Bureau of Standards

In the Bureau of Standards appropriation, $15,000 for the investigation of standards of practice and methods of measurement of public utilities is made available for electrolysis investigations and an appropriation of $15,000 for investigation of rails, wheels, axles and other railway equipment is consolidated with the appropriation for metallurgical research. For investigating structural materials, the same appropriation of $125,000 is given, which is $50,000 less than the estimates. An appropriation of $100,000 for investigation of internal combustion engines was refused. For mine scale investigations, the same appropriation of $15,000 is given, which is $10,000 less than estimated. Clay product testing receives $25,000, or $10,000 less than estimated. Appropriations of $20,000 for regulation of weights and measures and $25,000 for physical constants of materials were refused, as was also an appropriation of $15,000 for electro-deposition of metals. For metallurgical research $40,000 is given, an increase of $15,000 over the current year, but a decrease of $30,000 from the estimates.

Interior Increases Rejected

Representative Hayden of Arizona, proposed, but the House rejected, amendments to the Sundry Civil Appropriation Bill, increasing appropriations for the Public Land Service and Geological Survey, in the interest of the mineral development of the country. He argued that the mineral leasing law had increased the work of the Land Offices and it was necessary to give additional appropriations, in order that delays in issuing patents on lands might be overcome. He declared that under the Leasing Law the government had collected $9,000,000 back royalties on oil and that another $10,000,000 was affected in impounded oil and land withdrawals, the classification of which lands should be expedited.

The increased appropriations which Representative Hayden sought, but which the House refused, were as follows: Salaries of registers and receivers of land offices, from $450,000 to $475,000; contingent expenses of land offices, $375,000 to $425,000; topographic surveys, $330,000 to $345,000: Geologic Surveys, $352,000 to $400,000; guaging streams, $180,000 to $300,000.

Fuel Yard Abandonment Urged

Abolition of the government fuel yard in Washington, which supplies government departments in the national capital with coal, was advocated by Representative Blanton of Texas, on the ground that it was a war agency whose continuance was no longer necessary. Chairman Good thought the fuel yard was paying its way and was successful in securing coal for the government cheaper than heretofore. It ought at least to save the dealers cost. He said, however, that the superintendent of the capitol building had stated that he could purchase coal more cheaply from outside sources than through the fuel yard. The Committee in its report recommended for the fuel yards the same appropriation as that of the current year.

Abolition of the office of Surveyor General of South Dakota was recommended by the committee.

The appropriation for salaries for the General Land Office was decreased $20,000 from the current year and $276,050 from the estimates.

Indian Office salaries were decreased $27,000 from the current appropriation, and $123,000 from the estimates.

The same salaries are provided in the committee report for the Patent Office as for the current year, but $153,000 of the estimates are eliminated.

In the Interior Department, the following employes are eliminated: General Land Office, twenty; Indian Office, eighteen.

Appropriation for maintenance of sub-treasuries in nine cities are eliminated, as these offices will be abolished by June 30 under a former act of Congress.

In the Department of Labor, the Division of Information and twelve employes of the Bureau of Immigration are eliminated.

H. FOSTER BAIN NOMINATED DIRECTOR OF BUREAU OF MINES

H. FOSTER BAIN OF CALIFORNIA has been nominated by President Wilson as director of the United States Bureau of Mines, succeeding Dr. F. G. Cottrell, who resigned at the end of the year and on the first day of 1921 took up active duties as chairman of the division of chemistry and chemical technology of the National Research Council. Dr. Cottrell recommended Mr. Bain as his successor, and the latter is filling the office as acting director pending action upon his nomination by the Senate.

All of Mr. Bain's very active life has been spent in mining work or in activities closely allied thereto. He was born at Seymour, Ind., and on November 2 last passed his forty-eighth birthday. He graduated from Moore's Hill College in 1890, attended Johns Hopkins University from 1891 to 1893 and took his Ph.D. degree from the University of Chicago in 1897.

Mr. Bain has served as a geologist both in the Iowa, Illinois, and United States geological surveys; as a lecturer in the universities of Iowa and Chicago; as an editor both in Europe and America, and as assistant to the director of the United States Bureau of Mines. His experience in mining covers operations in Colorado connected with the Consolidated Franklin Mines Company, of Idaho Springs, and the Cripple Creek Mining Company, operating the Hull City placer in Teller County. Mr. Bain served in various positions, from shift boss to assistant superintendent, and in the case of the smaller property as manager. At the same time he made mine examinations in various parts of the West for a group of Iowa bankers, and in the South for some New York and Missouri people. His southern work included acting in a consulting capacity in the purchase and development of properties in the Joplin zinc fields and in the phosphate fields of Tennessee.

Later, as editor of the Mining and Scientific Press, he had occasion to visit nearly all of the larger mining districts of the West, including a number in Alaska, Canada and Mexico. While connected with the Mining Magazine, in London, he studied the tin mines of Cornwall and the principal mining districts of South Africa, including the Portuguese Territories and the Katanga district of the Belgian Kongo.

For the last four years his work has been mainly in the Far East, extending from Siberia to India, and included exploration, examination and consultation on development. He served as Assistant Director of the Bureau of Mines during the war period.

Mr. Bain was for some years an active member of the American Mining Congress, chairman of various committees and for a period one of the directors. He is a fellow of the Geological Society of America and a member of the American Institute of Mining Engineers, Mining and Metallurgical Society of America, Canadian Mining Institute and the Institute of Mining and Metallurgy.

Dr. Cottrell had planned to resign as assistant director of the Bureau of Mines last June and to take the position he now occupies, but was prevailed upon by Secretary of the Interior Payne when Director Manning resigned to take the directorship until an available successor could be found.

Barytes Producers Urge Tariff

C. P. DeLore, representing the Missouri Barytes Lithopone Association, before the House Committee on Ways and Means said that deposits of crude barytes ore in the United States exceeded those of Germany. He favored a duty on crude and ground barytes in order to meet German competition.

E. A. Stocking of the same association said miners' wages in this industry were $5.60 per ton as against $1.80 per ton before the war. He estimated there were 160,000 acres in Washington County, Missouri, containing this ore and in addition other areas in the state. The ore was also to be found in Connecticut, Maryland, Virginia, the Carolinas, Alabama, Georgia, Kentucky, Tennessee, Illinois, Texas, New Mexico, Wisconsin, Arizona, California, Utah, Nevada, and Idaho. He said that in Missouri the ore was mined with pick and shovel because there had been no stability to the industry to encourage modern methods, but that if a sufficient protective tariff should be established modern mining methods would be introduced.

W. S. Peebles of Carterville, Georgia, representing commercial miners of barytes, said the development of barytes deposits in Georgia progressed with great speed when German imports were stopped by the war. There are now eleven active producing operators in his district who ship their product to eastern manufacturers.

Osage Bonus Distribution Authorized

THE COURT OF APPEALS of the District of Columbia has rendered a decision authorizing the distribution of $33,000,100 of accumulated bonuses on the sale of oil lands of the Osage Indians to the parents and minor children of the tribe. The suit was brought by W. T. and Louisa Mosier, parents of Indian children, for a mandamus to compel Secretary of the Interior Payne to pay over funds due the children. The Department of the Interior asserted by way of defence that the funds were bonuses and not royalties, and that unlimited payments without accounting to the Indian Commissioner might lead to the squandering of the property of the minor children. It is probable that the Court of Appeals' decision against the Interior Secretary will be appealed to the United States Supreme Court.

LEAD AND ZINC PRODUCTION SHOWS HEAVY INCREASES

THE YEAR 1920 saw great increases in both the mine output of lead and zinc and the refinery output of lead, and the smelter output of zinc fell but a little short of that of 1918, according to figures of C. E. Siebenthal, of the Geological Survey.

The soft lead output by mines of the Mississippi Valley and the eastern states was about 275,000 short tons, and the output of argentiferous lead by mines of the western states was approximately 236,000 tons, a total of 511,000 tons. The output during 1919 was 237,000, 206,000 and 443,000 tons, respectively, and that of 1918 was 264,184, 314,470 and 581,654 tons, respectively. The increase for 1920 was 68,000 tons, whereas 1919 has sustained a decrease of 138,500 tons. Southeastern Missouri led all other districts in production, with 183,000 tons, as compared with 157,158 tons during 1919. The Cour d'Alene district of Idaho ranked second, with 121,000 tons, as compared with 83,833 tons in 1919. The Utah output was 67,000 tons, as compared with 61,915 tons during 1919.

Imports of lead in ore approximated 15,000 tons and in bullion 49,000 tons, a total of 64,000 tons as compared with 65,799 tons during the preceding year. Mexico provided 54,000 tons, and Canada 4,000, of the 1920 imports.

Lead content of lead ore in bonded warehouses at the end of November, 1920, was 16,187 tons and of base bullion 32,671 tons, part of which may have been smelted or refined but not shipped.

Recoverable zinc content of ore mined in 1920 was 597,000 tons, as compared with 557,000 tons in 1919 and 632,243 tons in 1918. Output of eastern states was 102,000 tons, of the central states 343,000 tons and of the western states 152,000 tons, as compared with 122,000, 305,000 and 130,000 tons, respectively, in 1919.

Imports of zinc in ore, which totaled 17,009 tons in 1919, aggregated 23,000 tons in 1920. Zinc content of Mexican ore importations in 1920 amounted to 16,000 tons, as compared with 11,225 tons during the preceding year. Australia sent ore containing 3,852 tons of zinc, while Canada and other countries sent smaller quantities.

The zinc content of zinc ore in bonded warehouses on November 30, 1920, was 25,642 tons, some of which may have been smelted but not shipped.

Production of primary domestic desilverized lead in 1920 was about 215,000 tons, of soft lead about 189,000 tons and of desilverized soft lead about 70,000 tons, giving a total of 474,000 tons of refined lead. The output in 1919 was 424,433.

Output of lead smelted and refined from foreign ore and bullion was 64,000 tons, as against 57,787 tons the preceding year. The total of lead smelted or refined in the United States during 1920 was approximately 538,000 tons, as compared with 482,220 tons in 1919.

Production of primary metallic zinc from domestic ores in 1920 was about 449,000 tons and from foreign ores approximately 14,000 tons, or a total of 463,000 tons as compared with a total of 465,743 tons in 1919. Of the 1920 domestic output about 51,000 tons consisted of electrolytic zinc, as compared with 27,056 tons in 1919. In addition to primary zinc there was an output of about 20,000 tons of redistilled secondary zinc, as compared with 19,748 tons in 1919. The total supply of distilled zinc and electrolytic zinc in 1920 was thus 483,000 tons, of which 81,000 tons was high grade, 34,000 tons intermediate, 51,000 tons select and brass special and 317,000 tons prime western. Of the total 1920 primary zinc output, Illinois made about 111,000 tons, as compared with 118,340 in 1919; Kansas 42,000 tons, as compared with 43,942 in 1919; Oklahoma 110,000 tons, as against 121,988 tons in 1919; Arkansas 30,000 tons, as against 31,437 during the preceding year, and Pennsylvania 74,000 tons, as compared with 67,521 tons in 1919.

Exports of zinc made from foreign ores totaled approximately 28,500 tons, and exports made from domestic ores about 86,000 tons, as compared with exports of 16,789 tons and 129,508 tons, respectively, in 1919. Exports of domestic included 12,000 tons of sheet, as against 19,762 tons in 1919.

Stocks of zinc at smelters and warehouses at the end of November approximated 61,500 tons, as compared with 36,793 tons at the end of 1919. Apparent consumption of primary zinc during 1920 was 324,000 tons, as compared with 323,964 tons in 1919 and 423,792 tons in 1918.

DROP IN YEAR'S COPPER OUTPUT

Smelter production from domestic ores during 1920 was estimated by H. A. C. Jensen, of the United States Geological Survey, at 1,235,000,000 pounds as against 1,286,000,000 pounds in 1919. Production of refined from foreign and domestic ores was 1,573,000,000 pounds, or 195,000,000 pounds less than 1919. Apparent domestic consumption was 910,000,000 pounds as compared with 877,000,000 pounds in 1919. Stocks of raw and refined at the end of the year aggregated 874,000,000 pounds, a decrease of 30,000,000 pounds from those at the end of 1919. Imports of raw and refined copper for ten months ending October 30, 1920, amounted to 407,437,515 pounds, according to calculations of the Bureau of Foreign and Domestic Commerce. For the same period exports aggregated 543,695,851 pounds, as against 516,627,775 for the whole year 1919.

"The continued decreased production, the large stocks and the low domestic consumption were due entirely to the generally depressed condition of industry throughout the world, which did not permit the absorption of as great quantities of copper as had been hoped for," Mr. Jensen stated in making his preliminary report and estimates. "Low exchange and the great stocks of scrap and secondary copper available both in the United States and abroad also decreased the demand for new copper.

"The salient features of the copper industry during 1920 were a small hesitating demand, decreased production, continued small imports, particularly during the last half of the year, and labor troubles."

Quicksilver Production Declines

FROM JULY 1 TO SEPTEMBER 30, 1920, 2,045 flasks of quicksilver of seventy-five pounds net were produced in the United States according to Geological Survey figures. This is 1,640 flasks less than was produced in the second quarter of 1920. Total production of the first three quarters of 1920 was 10,629 flasks. If final figures show that production continued to decline during the remainder of the year, the total for 1920 will be less than 12,000 flasks, or 9,000 flasks less than for 1919. Stocks unsold at the end of the third quarter amounted to 3,845 flasks. Nine mines in California, one in Nevada and two in Texas were the only ones reported as producing in the third quarter. California produced 1,356 flasks, Texas 615, and Nevada 74. The average monthly price per flask in San Francisco was $88 in July, $85 in August, and $75 in September. The average price for the quarter was $82.66 as compared with $91 during the second quarter, the decline being apparently due to diminished demand, to the return to the domestic market of stocks previously sold abroad and the offering for sale of surplus stocks. Depression of the market resulted in the idleness after the third quarter of two of the most productive mines.

THE OIL SHALE INDUSTRY IN 1920

A Review of a Forthcoming Treatise by Dr. Victor C. Alderson,
President Colorado School of Mines.

THE MOST IMPORTANT EVENT IN 1920, in so far as the oil industry is concerned, was the issuance of a patent to oil shale land by the United States government. This is the view taken by Dr. Victor C. Alderson, president of the Colorado School of Mines, and one of the world's recognized authorities on this subject. Dr. Alderson, who only recently returned from a European trip made for the purpose of shale investigation, has written a brief, but exhaustive, treatise on "The Oil Shale Industry in 1920," which will soon be issued as a publication of the educational institution over which he presides. A review of this treatise, advance proofs of which have been submitted to the Mining Congress Journal, is herewith given.

Dr. Alderson reviews the shale situation in Scotland and England particularly, and in other foreign countries generally, as a prelude to discussing the status and outlook of the industry in America at length. He regards the last year as one in which no spectacular results have been attained, but a year in which substantial and far reaching fundamental progress has been made.

Oil shale has been developed commercially in Scotland since 1850. The Scotch retort, however, which is a vertical two-chambered retort in which oil is produced in the upper and ammonia in the lower chamber, is not adapted, without modifications, to most American shales. In fact, Dr. Alderson points out that the only American deposits to which it is adapted—and even its use there would require modifications—is the oil shale deposit at Clay City, Kentucky.

Deposits of England are extensive, but most exposed in Norfolk County and on the English Channel. Both these deposits contain from five to eight per cent of sulphur, which makes the resultant oil objectionable and unsaleable. Removal of the sulphur without destroying the oil is held to be the serious technical problem before the English scientist, but as yet the ablest English chemists have found no solution.

Oil shales occur at Autun, Allier, the Midi, the Central plateau and in the Vandee, in France. Four of the ten seams at Autun have been worked, and the average yield is eighteen gallons of oil and from twenty-five to thirty pounds of ammonium sulphate. The Scotch method is followed.

Illuminating reference is made in the Alderson treatise to the extent of shale deposits and shale developments in Norway, Chile, Argentina, Finland, Canada, Tasmania, Australia and Brazil. The most interesting portion, of course, refers to the United States, and from this part of Dr. Alderson's article the following is reproduced verbatim:

Developments in the United States

Little has been published about the oil shale deposits of California yet they are extensive and valuable. It is reported that in Kern county an area of twenty-five square miles have been sampled and found to yield an average of 52 gallons of oil to the ton. At Elsinore, near Riverside, test pits show 15 feet of shale which yield from 58 to 62 gallons of oil. At the Shuman cut on the Southern Pacific, three miles north of Casmalia and ten miles from Santa Maria, a 250 foot face of oil shale is exposed on the west side of the cut. On the east side a hill 900 feet high is virtually all shale with a small overburden of soil. On the eastern edge of this hill an oil well sunk to 2,000 feet showed a continuous body of oil shale. The deposit has been sampled from surface exposures and by drill holes and shows an average from 30 to 35 gallons of oil to the ton. A sample tested at the Colorado School of Mines gave 32 gallons. The economic advantages of this deposit—cheap open cut mining, nearness to transportation, and to market—gives it a distinct advantage as a commercial project. The United States Producers Refining Company owns 1,000 acres of this ground. The President, E. W. Hartman, has designed a retort, the first 50 ton unit of which is now being installed and is expected to be in operation by February 1. No effort will be made to produce by-products. A skimming plant only will be erected. Mr. Hartman estimates that with a plant of 5,000 tons daily capacity, which he contemplates, he can mine and retort the shale for 65 cents a barrel and that the marketable product will be 20 gallons of gasoline, 3 gallons of distillate, and 2 gallons of coal oil to the ton of shale.

In Nevada the deposit seven miles from Carlin has been traced for a distance of 700 feet. Four veins are exposed, two five feet thick, one ten feet thick, and one 30 feet thick. The dip is 40°. An inclined shaft has been sunk on the 30 foot vein for a distance of 76 feet. The Nevada Shale Oil and Fuel Company, of Elko, Nevada, owns 320 acres of this ground.

At Elko, Nevada, the Catlin plant is on a commercially productive basis with a daily output of 100 barrels of crude oil. The mine has been opened by an inclined shaft 400 feet long, with drifts 100 feet apart, each approximately 400 feet long. No apparent change in the character of the shale has been noted. The cost of mining, as nearly as can be estimated now, is $1.25 a ton. The plant is a complete unit with retort, condensers, two 300-barrel stills, sweating, and refrigerating plant. The marketable products are gasoline, distillate, lubricating oil, and paraffin wax. Enough gas is produced from the raw shale in the retort, added to the gas made from the spent shale in a detached gas producer, to supply power needs of the entire plant. Experimental work has been going on for the past four years. Fifteen thousand gallons of crude oil have been produced and 4,500 gallons put through the stills. The product will not be put on the market until a commercial stock has been accumulated. To Mr. R. M. Catlin, Franklin Furnace, New Jersey, who alone has financed this undertaking and has done the experimental work, together with W. L. Scheeler, the superintendent, belongs the credit of operating the first commercially productive oil shale plant in the United States.

In Utah the Western Shale Oil Company erected a ten ton plant of the Galloupe type, was producing regularly, and had contracted with the Apex Refining Company for the delivery of oil. A fire, however, interfered with operation. Four additional units of ten ton capacity each are under construction and are expected to be completed by February 1. This will be increased to 100 tons by March 1. The company estimates that the total cost of production of oil in this plant will be $1.25 a barrel.

The black Devonian shales in Kentucky more nearly resemble the Scotch shale than any other deposit now known in the United States. The process for their treatment, as worked out at the Detroit Testing Laboratories, for the Devon Oil Shale Products Company, consists of a modified Scotch process. An analysis of the shale gave oil per ton, 22.7 gallons; gas per ton, 4,167 cu. ft.; ammonium sulphate per ton, 97.8 pounds; potash as K_2O per ton of spent shale, 58.8 pounds. The company is now erecting a complete plant at Clay City, Kentucky. The first unit will be of 50 tons daily capacity to be increased ultimately to 1,500 tons. The cost of mining and retorting is estimated at $1.04 a ton. At Petersburg, Va., six full sized retorts of the Wallace type are under construction.

In Colorado activity has been pronounced especially in and about Grand Valley and Debeque. At Grand Valley the Grand Valley Oil and Shale Company is erecting a Stalmann retort and a Wells Refining plant on their property in Starkey gulch six miles north of town. The company is also erecting a testing and research laboratory in the town of Grand Valley. The Union Oil Company of California and the Midwest Oil Company have both secured extensive acreage. The Schuyler-Doyle interests are erecting a Taff retort in Wheeler gulch. At Debeque the W. P. Hammon interests have acquired approximately 10,000 acres, are engaged in diamond drilling the ground and are planning to erect a plant. The Lackawanna Company is erecting a Randall retort, the Mount Blaine a Brown retort and the Monarch Company a Ginet retort. The Mount Logan Company is operating a Simplex retort. In Rio Blanco county the Continental Oil Shale Company has a 50 ton plant ready for operation in the spring. In Denver L. F. Chew, of the National Oil Shale Company, has erected a commercial sized vertical retort and is doing experimental work on both retorting and refining. J. McD. Johns, of the Industrial Process Company, of St. Louis, has put up a full sized inclined retort, the peculiar feature of which is that the shale is reduced to a very fine size; a part of this powdered shale is used as fuel to heat the retort and the rest is put through the retort and yields gas and oil.

Cost of Oil Shale Land

The cost of oil shale land in Kentucky, during the past year, has increased from $25.00 to $112.50 an acre. In Nevada and California large tracts of undeveloped ground have been secured at a few dollars an acre. In Colorado and Utah the value of shale land varies greatly, according to location and natural advantages. It is fairly safe to say, from general observation and some known sales, that during the past year the selling price has on an average increased one hundred per cent.

Research and Experimental Work

It would be impossible, within the limits of this paper to describe in detail the experimental and research work of the past year, even if it were worth while. The amount of work being done is so great and the number of investigators so numerous, scattered, and interested only in their own special problems, that the task of collecting, coordinating, and analyzing the individual results is virtually impossible. The problem remains the same, however; first, to perfect a retort of large capacity, fool proof in its operation, constructed on correct scientific principles, that will produce the maximum amount of good oil; second, to refine crude shale oil, not into a long list of hypothetical by-products, but into a few products for which there is a ready market; and, third, to coordinate the various processes so that the marketable products can be sold at a profit.

As usual, governmental and state research work lags behind private enterprise. Private interests are now employing their own chemists and technical men to make their investigations. The U. S. Bureau of Mines is doing creditable work as far as its resources will allow. At the Colorado School of Mines resources are limited, but the interest is so keen that individual efforts by Professors Low, Roberts, and Franks of the chemistry department, and Messrs. Keeney and Williams of the metallurgical research department, have resulted in scientific information and technical publications of permanent value to the industry. This has been carried to such an extent that even with its scant financial resources the Colorado School of Mines has attained an international reputation as a center of oil shale research and information.

General Observations

A retrospect of 1920 shows an interest in the oil shale industry exceedingly gratifying to those pioneers of the industry whose interest was first awakened by the bulletins of the U. S. G. Survey in 1913 and 14. A spirit of pessimism—the result of ignorance or ulterior motives—has been succeeded by a spirit of optimism. The organization of the Oil Shale section of the American Mining Congress has given formal recognition to the industry. The program of the Independent Oil Men's Association at Denver recognized the industry and many oil shale exhibits were installed. At the meeting of the American Mining Congress in Denver the Oil Shale convention, the working oil shale laboratory exhibit of the Colorado School of Mines, and the comprehensive exhibit of the Petroleum Engineering Company of Kansas City were notable features.

SHALE MEN'S ASSOCIATION ELECTS

J. B. JENSON of Salt Lake City has been elected president of the American Shale Men's Association, an organization which was formed at the 1920 convention of the American Mining Congress. R. C. Locke of DeBeque, Colorado, has been made secretary and Miss Irma Jenson of Salt Lake City, assistant secretary. One of the purposes of the organization will be to encourage the shale industry generally by preparing reliable data pertaining to property, processes, and titles and to disseminate information which will be of benefit to members and accrue to the advancement of the industry.

Oil Permits on Power Sites

THE FEDERAL POWER COMMISSION has rendered the following decision concerning oil and gas prospecting permits on lands within power site reserves:

"As to permits to prospect for oil and gas on lands within power site reserves, the authority of the Commission is limited to making the determination prescribed by section 24 of the Federal Water Power Act as to what lands within such reserves may be disposed of, subject to the power reservation, and that the Commission is authorized to find, if such be the fact, that the opening of these lands to limited disposal in the form of prospecting permits and leases, under the oil leasing act, but for no other purpose, would not injure or destroy the value of the lands for purposes of power development; and certify such finding to the Secretary of the Interior."

EQUAL RIGHTS FOR AMERICANS IN WORLD OIL FIELDS URGED

SENATOR K. D. McKELLAR, of Tennessee, declared in the Senate that the United States should conserve its oil supply by prohibiting development of oil in this country by foreign countries unless they granted equal privileges to Americans.

"Other nations are using our oil without let or hindrance and some are prohibiting our citizens from using their oil resources," he said. "The demand for oil by our navy, merchant marine, railroads, commercial, industrial and business activity has become so great that it can hardly be supplied. Seventy per cent of oil used comes from the United States and Mexico. Our supply is being rapidly exhausted while that of other nations is little interfered with."

The Senator quoted statistics of the Geological Survey showing the oil resources of the world amounted to 43,055,000,000 barrels, of which the United States has seven billion barrels. He said Great Britain has under control oil resources amounting to 11,325,000,000 barrels in Canada, Egypt, Persia, Mesopotamia, India and the East Indies and in addition owns a tremendous interest in Mexico, the United States, Germany, Russia, China, and the East and West Indies. He estimated England controled nearly half of the worlds oil resources.

Senator McKellar asserted that since the war England through her government and citizens has been taking steps to secure as large a part of the oil supply of the world as possible, and has gone into the oil business; obtained large grants in Persia; taken over mandatories containing oil fields; has organized companies in England and has prohibited the citizens of other countries from acquiring oil rights in any lands over which she has control.

"Our government should likewise take steps to guarantee our future supply," the Senator continued. "Our citizens should have the right to acquire oil lands and produce oil wherever it may be found, and if they are not given these rights, we should shut off from our supply the governments and their citizens refusing to give us those rights."

The Senator said that from 1887 to 1918 the United States had produced 4,608,571,719 barrels of 42 gallons each of oil, or 61.42 per cent of the worlds production of 7,503,147,138 barrels. He said our supply of oil would be gone in fifteen or thirty years at the latest.

The Senator pointed out that while England paid from $1.75 to $2.50 per barrel for fuel oil at Atlantic and Gulf ports and $1.20 to $2.50 at Pacific ports, oil produced by British companies in Persia and other foreign countries is sold to the American Navy, Shipping Board and ship owners at from $7 to $12 per barrel. He declared that England gets 80 per cent of her gasoline from the United States and that if it was not for American oil fields and Mexico, England could not run a ship.

All of the two Americas, Northern Europe and Northern Asia with the exception of Japan is open to oil prospectors of America, but all the British fields are closed to America.

Semi-Annual Gasoline Survey

Gasoline being sold this year is similar in quality to that marketed last year, judged by conditions disclosed in the semi-annual survey of motor fluids now being conducted by the Bureau of Mines. So far, results are known only for the Pittsburgh district, but the survey will be extended to include San Francisco, Salt Lake City, New Orleans, St. Louis, Chicago, Cincinnati, Washington and New York.

258,000 PRODUCING OIL WELLS IN UNITED STATES.

ON OCTOBER 31, 1920, according to figures recently announced by the Geological Survey, there were 258,000 producing oil wells in the United States with an approximate production of 4.98 barrels per well per day. The figures for California were reported to the Survey by the Standard Oil Company and the Independent Producers Agency, and those for states east of California by the pipe line companies. The figures in many instances are approximated, because some of the pipe line companies do not maintain lists of wells with which their lines are connected, and the Survey in estimating the number of wells in such instances calculates on the basis of production per well per day. The Geological Survey figures follow:

PRODUCING OIL WELLS IN THE UNITED STATES OCT. 31, 1920.

State.	Approximate number of producing oil wells.	Approximate production per well per day.
		bbls.
California	9,490	32.3
Colorado	70	4.1
Illinois	16,800	1.7
Indiana	2,400	1.1
Kansas	15,700	7.4
Kentucky	7,800	3.2
Louisiana:		
Northern	2,560	31.7
Coastal	140	34.6
Total Louisiana	2,700	31.8
New York	14,040	0.2
Ohio:		
Central and Eastern	18,500	0.8
Northwestern	21,100	0.3
Total Ohio	39,600	0.5
Oklahoma	50,700	6.0
Pennsylvania	67,700	0.3
Texas:		
Central & Northern	9,400	22.9
Coastal	1,700	49.7
Total Texas	11,100	27.0
West Virginia	19,500	1.1
Wyoming & Montana	1,000	55.9
Total	258,000	4.98

WYOMING LEADS ROCKY MOUNTAIN STATES IN OUTPUT OF OIL.

WYOMING IS THE MOST IMPORTANT crude oil producing state in the entire Rocky Mountain region, according to the Federal Trade Commission, which has sent to Congress a report on production and marketing for the state. The report shows that there is greater concentration in the control of oil production in this region than in any other field in the country.

The annual production of Wyoming first became important in 1912, when the output was about 1,570,000 barrels. In 1919 the output was nearly 13,630,000 barrels, and during the year just closed it jumped to approximately 17,000,000 barrels. This production was far greater than that of any other state in the region.

The Trade Commission informs Congress that Midwest refining interests are under control of the Standard Oil Company of Indiana, which together with other Standard Oil companies controls the bulk of the crude oil produced in the state. The control has been obtained through long time contracts which expire January 1, 1934. The Ohio Oil Company, a Standard company, has the largest owned production in the state, and in addition controls considerable quantities through working agreements. From 1917 to 1919 the Midwest interests controlled from 65 to 69 per cent of the state's production; the admitted Standard interests controlled from 27 to 29 per cent, and the two combined controlled from 93 to 97 per cent of the total output. The report says the Midwest Refining Company and the Illinois Pipe Line Company, both controlled by the Standard, operate practically all pipe lines and transport nearly all the oil marketed in Wyoming. The rates of the Illinois Pipe Line Company are said to compare favorably in cheapness with pipe line rates in other fields.

Navy Would Continue Commandeering Of Coal and Fuel Oil.

SECRETARY OF THE NAVY Josephus Daniels, in a letter sent to Congress opposing repeal of the Lever Food and Fuel Control Act, a bill for which has passed the House, recommended in the event of repeal the enactment of a measure authorizing the navy to continue commandeering coal and fuel oil until June 30, 1922. The Secretary said that under commandeering orders the navy saved $10,141,313 from June 1, 1917 to December 31, 1920, of which $6,775,190 was saved on the purchase of 9,454,348 tons of coal and $3,366,123 on the purchase of 17,703,749 barrels of fuel oil.

Satisfactory Year for Magnesite.

MAGNESITE PRODUCTION in 1920 was greater than that of any previous year except 1917. Production of crude magnesite in Washington, according to the Geological Survey, was about 235,000 short tons as compared with 106,200 tons in 1919. Practically all of this output was dead-burned and sold as refractory material to steel companies and manufacturers of refractory products east of Chicago. The California output was approximately 60,000 tons, the exact figures not being available.

The total output for the United States was between 275,000 and 300,000 tons. Imports between January 1 to September 30, 1920, amounted to 20,730 tons of crude and 10,439 tons of calcined as compared with 6,381 tons of crude and 9,471 tons of calcined during the year preceding. Estimated as crude magnesite the imports first nine months of 1920 were about 41,600 tons as compared with 25,300 tons in 1919. Imports for the entire year will probably be shown when complete figures are available to have amounted to 50,000 tons of crude, or double those of 1919.

An investigation of the relations of time, temperature and size of particles in the decomposition of magnesite was made during the year by the Bureau of Mines in cooperation with Northwest Magnesite Co. at the mining experiment station at Berkeley, Calif. An electrically heated rotary furnace was used for these experiments in calcination, and the samples of crude magnesite used were obtained from mines in California and Washington.

Experiments with magnesite from Washington that has been used exclusively as refractory material are said to show that it is suitable also for use as plastic material, and preparations are being made to calcine it at the mines near Valley, Washington, for use in cement.

GOLD AND SILVER PRODUCTION, IMPORTS AND EXPORTS FOR 1920

GOLD PRODUCTION in 1920 amounted to $49,509,400, or $10,824,000 less than in 1919, and that of silver to 56,564,504 fine ounces, or 117,941 ounces less, according to figures announced by the Bureau of the Mint. Silver values were calculated upon the basis of $1.01513 per fine ounce from January 1 to 17, 1920, and thereafter during the remainder of the year upon the basis of $1.00 per ounce, as provided by the Pittman Act. Production by states during 1920 is shown in the following table:

GOLD

State or Territory	*Fine ounces*	*Value*
Alaska	380,034	$7,856,000
Alabama	10	200
Arizona	239,118	4,943,000
California	692,019	14,305,300
Colorado	368,298	7,613,400
Georgia	53	1,100
Idaho	22,509	465,300
Illinois	0	0
Michigan	0	0
Missouri	19	400
Montana	88,971	1,839,200
Nevada	171,968	3,554,900
New Mexico	22,417	463,400
North Carolina	53	1,100
Oregon	46,687	965,100
South Carolina	14	300
South Dakota	203,243	4,201,400
Tennessee	280	5,800
Texas	5	100
Utah	100,446	2,076,400
Washington	7,198	148,800
Wyoming	10	200
Philippines	51,568	1,066,000
Porto Rico	97	2,000
	2,395,017	49,509,400

SILVER.

	Fine ounces	*Value*
Alaska	792,751	$ 804,745
Alabama	5	5
Arizona	6,098,251	6,190,518
California	1,513,495	1,536,394
Colorado	5,572,407	5,656,718
Georgia	140	142
Idaho	7,531,253	7,645,201
Illinois	8,500	8,629
Michigan	510,601	518,326
Missouri	123,219	125,083
Montana	13,583,164	13,788,677
Nevada	7,392,689	7,504,540
New Mexico	764,586	776,154
North Carolina	11	11
Oregon	182,558	185,320
South Carolina	0	0
South Dakota	84 351	85 627
Tennessee	112,595	114,299
Texas	524,212	532,143
Utah	11,564,155	11,739,121
Washington	183,437	186,213
Wyoming	72	73
Philippines	21,917	22,249
Porto Rico	135	137
	56,564,504	57,420,325

Federal Reserve Board's Figures.

Gold imports during the calendar year 1920 totaled $428,700,000, as shown by Federal Reserve figures, and compared with $76,500,000 in 1919. Gold exports aggregated $322,100,000 as compared with $368,200,000 in 1919. There was a gain through net imports of $106,600,000 in the national gold stock as compared with a loss of $291,700,000 through net exports in 1919.

The Federal Reserve report states that:

"Gold imports are shown inclusive of $108,500,000 of gold formerly held earmarked for account of the Federal Reserve Banks by the Bank of England and returned late in the year to this country. This amount, while increasing the stock of gold of the United States, does not affect the total gold reserves of the Federal Reserve Banks, since gold held by foreign agencies is counted by the Reserve Banks as part of their reserves. Practically no change for the year is shown in the gold reserves of the Reserve Banks."

Of the year's total gold imports, $274,900,000, or more than 64 per cent, came from Great Britain; $48,700,000, or more than 10 per cent, from France; $34,200,000, or eight per cent, from Canada; $30,200,000, or about seven per cent, from Hongkong. Smaller amounts came from Colombia, Mexico, the Dutch East Indies and Peru.

Nearly 60 per cent of the year's gold exports were consigned to Asia. More than 30 per cent, or $101,300,000, went to Japan alone. The principal other Asiatic recipients were Hongkong, China and the Dutch East Indies. Argentina stood next to Japan, receiving about $90,000,000 or 27 per cent, of all American gold exports. Most of this amount represented shipments of the metal held since the war by the Federal Reserve banks for the account of the Argentine government, while a smaller portion apparently is composed of receipts from Europe, principally Great Britain, and reconsigned to Argentina. During the year Mexico received from the United States $18,200,000; Uruguay, $12,900,000, and Canada, $5,600,000.

Silver imports during the year aggregated $88,100,000, as compared with $89,400,000 during 1919. Exports aggregated $113,600,000 as against $239,000,000 in 1919. Net silver exports for the year were $25,600,000, as compared with $149,600,000 in 1919. More than 60 per cent of silver importations came from Mexico. Peru, which sent nearly $12,000,000, ranked second. Considerable amounts were also brought in from Canada, Chile, the Dutch East Indies and China. More than 84 per cent of all silver exports was consigned to the Far East. Of this amount, more than half went to China. British India, which during 1919 received more than 45 per cent of America's silver exports, received only small amounts in 1920. Silver exports to Great Britain during 1920 aggregated $4,900,000. More than $7,000,000 went to Canada and $3,200,000 to Mexico.

No Gold Coined During Year.

COINAGE DURING 1920 totalled 64,876,000 pieces of a value of $4,534,400. The coins consisted of 2,386,000 half dollars, 5,448,000 quarter dollars, 13,990,000 dimes, 3,747,000 five-cent pieces and 39,305,000 one-cent pieces. No gold was coined during the year.

Coinage for other governments consisted of 5,050,000 nickel pieces for Cuba, 3,080,000 nickel pieces for Peru, 2,315,000 nickel pieces for Colombia and 1,500,000 bronze pieces for Indo-China.

The Director of the Mint purchased 29,817,361 ounces of silver under the Pittman Law during the year.

NATIONAL LEGISLATION

AT THIS WRITING, January 19, there have been introduced in the final session of the Sixty-sixth Congress 1332 bills in the House and 4874 bills in the Senate, making a total of 6206.

Much legislation of importance to the mining industry has come up for action during the current month.

The Calder Committee, which has been considering legislation concerning the coal industry, presented its bill for price fixing and regulation of the industry. The tendency is to rush the bill through Congress. It is now before the Committee on Manufactures and it has been decided to limit the hearings on the measure to three days, January 18, 19, and 20.

Representative Newton of Minnesota introduced a bill authorizing the Federal Trade Commission to report to the House the tonnage of anthracite and bituminous coal purchased by the Government in the United States during 1919 and 1920.

The Ways and Means Committee of the House held hearings January 12, 13, and 14 on the tariff question. Representatives of the mining industry appeared on January 12 and 13. The American Mining Congress has issued a series of bulletins covering these hearings which it will be glad to furnish to those interested.

Lead and zinc producers, metal producers, pyrites, and chemical products were recommended for inclusion in the tariff schedule. The lead and zinc interests also appeared before the Senate Finance Committee and urged emergency tariff legislation.

Senator Spencer of Missouri has introduced a new zinc bill as a substitute for his measure now pending before the Finance Committee.

The Senate, on January 15, passed by a vote of 34 to 29 the bill establishing a government nitrate corporation under the Treasury Department. The bill goes to the House for final action.

The bill for the relief of war minerals claimants, commonly known as the "Court of Claims Bill," which has already passed the Senate, is still pending in the House. Secretary of the Interior Payne, in a letter to the House Committee on Mines and Mining, opposed the passage of this legislation on the ground that it is too broad and would permit of a reexamination of all claims. The bill came up under unanimous consent on January 17, but was opposed. The Mines and Mining Committee on January 13, unanimously agreed to favorably report the Senate bill covering the same provisions, which now occupies a preferential place on the calendar.

Representatives Rhodes and Hayden and Senator Henderson have introduced bills changing the date during which annual assessment work must be performed from January 1 to July 1.

Senator La Follette of Wisconsin endeavored to have the Senate reconsider the passage of the Poindexter anti-strike bill. It is probable that the Senate will reconsider the passage of this measure, which would apply to coal mines and other industries connected with transportation and commerce.

One of the important pieces of legislation which received final action was the passage by Congress, over the President's veto, of the bill for the revival of the War Finance Corporation.

Senator Gore of Oklahoma, introduced on January 6 a bill which provides a year's grace in the payment for additional assessments of revenue taxes

The sub-committee to whom the Senate Committee on Judiciary referred the bill repealing war legislation, including the Lever Food and Fuel Control Act, on January 17 by a vote of 4 to 3 decided to recommend the continuance of the Lever Food and Fuel Control Act.

Senator Phelan has introduced a bill which authorizes the President by proclamation to place embargoes against the exportation of petroleum oil.

The bill which was introduced last May providing for the creation of a Department of Education was reported with amendments on January 17 from the Committee on Education. The amended bill gives the authority and discretion in the act to Congress instead of the President as provided in the original bill.

A general resume of all of the bills above referred to follows:

COAL.

S. 4828. (*The Federal Coal Act*). Introduced by Mr. Calder; referred to the Committee on Manufactures. The bill authorizes the Federal Trade Commission to currently require and secure reports respecting ownership, production, distribution, stocks, costs, sales, and profits in the coal industry and trade in so far as it deems necessary in the public interest. It may investigate from time to time the organization, business, conduct, practices, and management of persons and corporations producing coal. The powers of the Act with respect to corporations interested as consumers in the storage of coal extend only to reports and investigations covering the quantities of coal consumed by, the stocks of coal held by, and the kind of business engaged in by any person or corporation, etc. The reports may be required monthly or at regular or special periods as the commission may desire. The commission must make public promptly and submit to Congress a summarized statement of the information so gathered together with such explanations and recommendations as it shall deem useful to Congress and to the people of the United States. In these reports the Commission shall name any person or corporation charging a price for coal which it finds after hearings to be unreasonable, such report to be accompanied by a brief statement of facts upon which such finding is based. The bill also provides that whenever any association exists having to do with the coal industry, it is also subject to investigation by the Federal Trade Commission. Section 5 of the bill requires that the Interstate Commerce Commission may require reports from railroads and shall compile information and statistics on the ratings of mines for the purpose of distribution of coal cars; also upon the loading, movement, reconsignment, and unloading of coal or coal cars. These reports shall be currently done and shall cover monthly or other regular or special periods. The Interstate Commerce Commission must promptly summarize statements to be presented to Congress and to the people of the United States and shall transmit the same to the Federal Trade Commission for publication. Section 6 provides that the Geological Survey shall continue to publish its reports and bulletins concerning the industry and is authorized to call upon the Federal Trade Commission and the Interstate Commerce Commission to obtain for the Survey such data as is required for its reports. The Director of the Geological Survey may also secure information upon the subjects desired from such classes of persons or corporations having this information as the Federal Trade Commission and the Interstate Commerce Commission may mutually agree with the Director upon. In case of any controversy through the Courts resulting from the failure to comply with the provisions of the bill any person who refuses to attend or testify or answer any lawful inquiry shall be fined not less than $1,000 nor more than $5,000 or be imprisoned for not more than one year or both. If any person or corporation required by the Act to file any report or information shall fail to do so within the time fixed by the commission for filing the same, shall continue for thirty days after notice of such default, the person or corporation shall forfeit to the United States the sum of $100 for each day of the continuance of such failure. A fine of $1,000, imprisonment for six months or both, is imposed for any person or corporation who shall make any misleading entry or statement of fact in any report which is required to be filed. Section 10 provides that any officer or employee of the commission who shall make public any information obtained by the commission without its authority shall be punished by a fine not exceeding $5,000, imprisonment for one year or both. Section 11 provides that in order to insure the furnishing of information which the Federal Trade Commission is authorized to collect, the President shall issue upon application a license, pursuant to this section, to every operator and dealer in coal, any part of whose business is in commerce, and after ninety days from the date the Act becomes effective no operator or dealer shall engage in or carry on any coal business in commerce, unless he shall secure and hold a license issued pursuant to this section. A fine of $5,000 or imprisonment for not more than two years or both is imposed for violation of these provisions; with the exception that license shall be required of any operator or dealer whose gross sales during the preceding year was less than $50,000. Section 12 provides that whenever the Federal Trade Commission shall determine that an emergency exists or threatens in the coal industry, which seems likely to produce a shortage or bring about unusual or unreasonable prices in coal, the President is authorized to declare the existence of an emergency and thereupon to fix maximum coal prices and dealer's commissions and margins, which price shall continue until the President declares the emergency to have passed. During such an emergency the President is empowered to revoke the license of any operator or dealer who has sold coal or charged a commission in excess of those fixed. The President is authorized in such an emergency to deal in coal at reasonable prices and to control the production, movement, and distribution of coal in such manner and to such extent as he shall deem necessary. Section 13 provides that in commerce in the coal industry and trade no owner, operator, or dealer shall sell or lease coal lands to any person or corporation when such owner, etc., or any of his directors, officers, or managers, shall at the same time be an officer, director, manager, etc., has a substantial interest in the purchasing person or corporation expect when such selling, leasing, and purchasing shall be under open competitive bidding. It is specifically provided, however, that nothing in this section shall prevent any industrial concern from owning and operating a coal mine or coal mines for its own use and consumption. Section 14 levies a brokerage tax to be paid into the Treasury of the United States on the sale of all coal procured directly from an operator of a sum equivalent to one-half of all amounts charged as commissions or received as margins on such sales in excess of 15c per ton and not more than 30c per ton, and a sum equivalent to three-fourths of all amounts charged as commissions or received as margins on such sales in excess of 30c per ton; and a sum equivalent to 90 per cent of all amounts charged as commissions or received as margins in excess of 5c per ton on all sales by dealers of coal not procured directly from operators. It also provides that no such taxes shall be assessed against or paid by any dealer whose gross annual sales during his preceding fiscal year aggregated less than $500,000 on sales of coal procured directly from operators. Section 15 provides that the Secretary of Labor shall investigate from time to time the wages, output per person, working conditions, terms of employment, and the living expenses of miners and other workmen employed in mines, such information to be available at times of general readjustment of wage contracts in the coal industry. The Bureau of Mines is directed to investigate methods and processes for storage and combustion of coal and the transmission of power from fuel centers and conduct such experiments and research as it may find advisable to determine the most efficient means for such storage, combustion, and transportation, etc., and to make a preliminary report to Congress with respect thereto not later than June 1, 1921. The Bureau is also authorized to investigate the desirability and practicability of prescribing in the marketing of coal statutory standards and inspections for various kinds and grades of coal. Section 19 provides that the Federal Trade Commission and the Interstate Commerce Commission, respectively, shall have power to make and enforce all rules and regulations necessary for carrying out the provisions of the Act and to prescribe a method of procedure to be followed in making the investigations which are authorized by the Act. Section 20 provides that nothing in the Act shall be construed to limit or repeal any provisions contained in the Federal Trade Commission Act or the Interstate Commerce Commission Act, or the Transportation Act. Section 21 appropriates the sum of $10,000 each to the Director of the Geological Survey and the Interstate Commerce Commission and $25,000 to the Federal Trade Commission to defray the expenditures incurred in the performance of carrying out the Act.

H. R. 15728. Introduced by Mr. Butler of Pennsylvania; referred to the House Naval Committee. This bill provides that until January 30, 1922, the President is authorized to requisition fuel necessary for the maintenance of the Navy and to requisition facilities for handling and storing such fuel. He shall ascertain and pay a just compensation therefor. If this compensation so determined is not satisfactory to the person entitled to receive it such person shall be paid 75 per cent of the amount and shall be entitled to sue the United States to recover such further sum, as added to the 75 per cent as will make up such amount as will be just compensation for the property so requisitioned. The bill specifically provides that nothing in the Act shall be construed to require any person to furnish to the Government any fuel held by him and reasonably required for consumption or use by himself and dependents.

H. Res. 645. Introduced by Mr. Newton of Minnesota; referred to the Committee on Interstate and Foreign Commerce. This resolution provides that the Federal Trade Commission be directed to ascertain and report to the House of Representatives at the earliest moment the tonnage of anthracite and bituminous coal purchased by the Government within the territorial limits of the United States during the years 1919 and 1920; also the production cost, mine price, prices paid by the Government, arrangements under which it was purchased by the Government, compensation paid to any broker or agent in the purchase thereof, compensation paid by the seller to any broker or agent or middleman in connection with such sale, and whether such payment and the amount was made with the knowledge of a responsible representative of the Government. They are also to report upon the amount paid by the government for all coal so furnished by it in 1920 over the excess of the amount paid by it for the same tonnage in 1919. The Federal Trade Commission is directed to promptly report to the House any attempt to interfere with the securing of the information called for by the resolution.

S. 4864. Introduced by Senator Smoot. The bill amends the Act for leasing of coal lands in Alaska by providing for the lease in 40-acre tracts of not exceeding 2,560 acres for coal, lignite, and associated minerals to any citizen of the United States or corporation or municipality organized under the United States' laws, stipulating that the majority of the stock of such corporation shall at all times be owned and held by Americans. Railroads shall not acquire through lease or permit coal or coal lands in excess of an area or quantity as may be required and used solely for its own use. All claims to existing rights of any coal lands on which final proof has been submitted and which are now pending before the General Land Office or the Secretary of the Interior shall be settled within one year from the passage of this Act.

S. 2189. This bill provides for the agricultural entries on coal lands in Alaska. It has been reported from the Committee on Territories, to which it was referred, without amendment. The bill passed the Senate on January 5 and has gone to the House. It provides for agricultural entries on coal, oil or gas lands.

TARIFF

Emergency Bill H. R. 15275. Introduced by Mr. Fordney; referred to the Committee on Ways and Means, from which committee it was favorably reported without amendment and passed the House of Representatives on December 22, 1920. The life of the Act is limited to a period of ten months and imposes a tariff upon wheat, potatoes, rice, cattle, cotton, wool, etc. It is now being considered by the Senate Finance Committee.

H. Con. Res. 68–69. Introduced by Mr. Fordney. Providing for a summary of tariff information for 1920 to be prepared for the use of the Ways and Means Committee and that statistics of imports and duties from 1908 to 1918 be prepared for the use of the same committee.

H. R. 15448. Introduced by Mr. Esch; referred to the Committee on Interstate and Foreign Commerce. (Consolidating the work of compiling foreign commerce statistics.) The bill provides for the Bureau of Customs Statistics to be transferred from the Department of the Treasury to the Department of Commerce, with which Bureau shall be consolidated the Division of Statistics of the Bureau of Foreign and Domestic Commerce.

ZINC

Amending H. R. 6238. Proposed by Mr. Spencer, providing that immediately upon the passage of the Act there shall be levied upon all zinc-bearing ores containing more than 10 per cent and less than 25 per cent of metallic zinc a duty of 1½c per pound on the metallic zinc contained therein; upon all zinc-bearing ores containing more than 25 per cent metallic zinc 2 cents per pound. No duty shall be levied upon metallic contents of zinc ores containing less than 10 per cent of metallic zinc. All importations of zinc-bearing ores shall be subject to estimated rate of duty at port of entry. Upon blocks or pigs and zinc dust a duty of two cents per pound is imposed; in sheets coated or plated with nickel two cents per pound; old and worn out, fit only to be remanufactured, one cent per pound. A duty of one cent per pound is imposed upon zinc oxide and white pigment containing zinc, but not containing lead; ground in oil 1¾ cents per pound; sulphide of zinc, white or white sulphide of zinc, 1¼ cents per pound; chloride of zinc and sulphate of zinc, one cent per pound.

REVENUE

S. 4794. (*Amending Sections* 216 *and* 223 *of the Revenue Act*). Introduced by Mr. Trammell; referred to the Committee on Finance. The bill provides that Section 216 be amended to read: In the case of a single person, a personal exemption of $1,500, or in case of the head of a family or a married person living with husband or wife, a personal exemption of $3,000. A husband and wife living together shall receive but one personal exemption of $3,000 against their aggregate net income; and in case they make separate returns, the personal exemption of $3,000 may be taken by either or divided between them. Section 223 is amended to include the above provisions with the exception that they shall make under oath a return stating specifically the items of their gross income and the deductions and credits allowed.

S. 4806. (*Amending subdivision B of Section* 250). Introduced by Mr. Gore; referred to the Committee on Finance. This subdivision is amended by adding at the end the following paragraph: Where additional taxes are assessed or determined because of understatement without intent to defraud, as herein provided, the commissioner may accept payment of such additional taxes in installments fixed with respect to time and amount at his discretion, but in no case to exceed twelve months from the date upon which the taxpayer is notified that such additional taxes are due. Except in cases in which a higher rate of interest is now imposed by law, the amount of taxes so deferred shall bear interest at the rate of two-thirds of one per cent a month from the date upon which the taxpayer is so notified, to be paid at each deferred installment date, in addition to the amount of tax then payable. The commissioner, with the approval of the Secretary, is hereby authorized to make all needful rules and regulations for the enforcement of the provisions of this Act.

H. R. 14198. (*Simplifying the Revenue Act*). This bill was passed by the House of Representatives on May 27, 1920, and referred to the Finance Committee of the Senate. It amends Section 202 of the Revenue Act which provides for the basis for determining gain or loss by providing that in case the property is acquired before March 1, 1913, the fair market price or value of the property shall be of that date. In case the property is acquired, except by gift, etc., on or after that date the cost, inventory value, etc., shall be made in accordance with Section 203. In case the property is acquired by gift since February 28, 1913, the same basis is used as it would have been had it remained in the hands of the donor. In the case of the sale or exchange of property acquired by gift, the entire amount received therefor shall be included in the gross income of the donee, unless he submits with his return, evidence satisfactory to the commissioner showing the basis in the hands of the last preceding owner who acquired the property other than by gift. In the case of property acquired after February 28, 1913, by bequest, etc., the basis shall be the fair market price or value of such property on the date of acquisition. Section 202 of the Act is amended by adding at the end thereof a new sub-division which reads as follows: In the case of stock dividends paid after February 28, 1913, the cost to the taxpayer of each share of old and new stock shall be the cost of the old shares of stock (or the market price or value thereof as of March 1, 1913, if acquired prior thereto,) divided by the total number of old and new shares of stock: Provided, that in cases in which the old and new shares of stock differ materially in character or preference, the cost of the old shares of stock (or the market price or value thereof as of March 1, 1913, if acquired prior thereto) shall be opportioned between the old and new shares of stock as nearly as may be in proportion to the respective values of each at the time the new shares of stock were acquired. A new section is included after Title II on extraordinary net income which provides that compensation received in any taxable year beginning after December 31, 1919, for personal service rendered by the taxpayer during a period of more than three years the gain derived shall be deemed to be extraordinary. This section specifically defines the terms capital assets, compensation received, and gain derived. If the extraordinary income of a taxpayer amounts to more than 20 per cent of his entire gross income for the taxable year, such income may at his option be apportioned ratably to the years or parts thereof during which such service was rendered, which amount shall be added to the other income of the taxpayer for such year and the tax redetermined upon the corrected amount at the rates applicable to such year. Section 4 of the bill amends Section 250 to provide that the amount of tax due under any return made under this or prior Acts shall be determined and assessed by the commissioner within five years after the return was made, except in the case of false or fradulent returns with intent to evade the tax or with the consent of both the commissioner and the taxpayer or as provided by Sections 207, 214 and 234. No suit or proceeding for the collection of any tax shall be begun after the expiration of five years after the date when the return was made. Title XIII is amended by the adding of two new sections, Section 1321 and 1322, the first of which provides that if after a determination and assessment in any case the taxpayer has without protest paid in whole any tax or penalty and an agreement is made in writing between the taxpayer and the commissioner, such determination and assessment shall be final and conclusive and the case shall not be reopened or the determination and assessment modified by any officer, employee, or agent of the United States, and no unit, action or proceeding to annul, modify, or set aside such determination or assessment shall be entertained by any court of the United States. Section 1322 provides that in case a regulation of Treasury decision made by the commissioner or the Secretary is reversed by a subsequent regulation or Treasury decision, and such reversal is not immediately required by an opinion of the Attorney General or a decision of a court of competent jurisdiction, such subsequent regulation or Treasury decision may, in the discretion of the commissioner, be applied without retroactive effect. Section 6 provides that on and after January 1, 1920, 4 per cent and 4½ per cent liberty bonds shall be exempt from graduated additional income taxes, commonly known as surtaxes, and excess-profits and war-profits taxes, now or hereafter imposed upon the income or profits of individuals, partnerships, etc., in respect to the interest on aggregate principal amounts thereof shall until the expiration of two years after the date of termination of the war between the United States and Germany on $125,000 aggregate principal amounts; and for three years more on $50,000 aggregate principal amount.

H. R. 15524. Introduced by Mr. Steenerson; referred to the Committee on Post Office and Post Roads. The bill amends Section 1103 of the Revenue Act to read as follows: "That in the case of newspapers and periodicals entitled to be entered as second-class matter and maintained by and in the interest of patriotic, religious, educational, scientific, philanthropic, agricultural, labor, or fraternal organizations or associations not organized for profit and none of the net income of which inures to the benefit of any private stockholder or individual, the second-class postage rates shall be, irrespective of the zone in which delivered (except when the same are deposited in a letter-carrier office for delivery by its carriers, in which case the rates shall be the same as now provided by law), 1¼c a pound or fraction thereof on and after July 1, 1918, and until July 1, 1919, and on and after July 1, 1919, 1¼c a pound or fraction thereof. The publishers of such newspapers or periodicals, before being entitled to the foregoing rates, shall furnish to the Postmaster General, at such times and under such conditions as he may prescribe, satisfactory evidence that none of the net income of such organization inures to the benefit of any private stockholder or individual."

H. R. 15376. Introduced by Mr. Howard; referred to the Committee on Ways and Means. The bill amends sub-division B of section 250 of the Revenue Act by providing that where additional taxes are assessed or determined because of understatement without intent to defraud and it is shown to the satisfaction of the commissioner that the taxpayer is without adequate means to pay such additional taxes immediately and is unable to borrow the amount required to pay such taxes at reasonable rates of interest the commissioner may accept payment of such additional taxes in installments fixed with respect to time and amount at his discretion, but in no case to exceed twelve months from the date upon which the taxpayer is notified that such additional taxes are due. Except in cases in which a higher rate of interest is now imposed by law, the amount of taxes so deferred shall bear interest at the rate of two-thirds of 1 per cent a month from the date upon which the taxpayer is so notified, to be paid at each deferred installment date, in addition to the amount of tax then payable. The commissioner, with the approval of the Secretary, is authorized to make all needful rules and regulations for the enforcement of the provisions of the Act.

H. R. 14198. Introduced by Mr. Henderson; referred to the Committee on Finance. The bill amends the Revenue Act by inserting on page 4, line 12, after "1913": "Or receipts from oil and gas under sections 18 and 19 of Act of Congress approved February 25, 1920."

LABOR.

H. R. 15227. Introduced by Mr. Upshaw; referred to the Committee on Judiciary. The bill makes it unlawful for any alien residing in the United States to vote or in any other way to participate in the management of labor unions or other industrial organizations the members of which are employed in or have power to interfere with interstate or foreign commerce, or that are employed upon any public works of the United States. A fine of $500 or imprisonment for not more than two years is imposed for violation of the Act.

S. 4671. (*Prohibiting immigration for five years*). Introduced by Mr. Overman; referred to the Committee on Immigration. The bill provides that upon the passage of the Act that immigration of aliens to the United States be suspended for a period of five years. Proper safe guards are placed around ministers, students, travelers, etc.

Senate Con. Res. 37. Introduced by Mr. Borah. This resolution reads as follows: Whereas, according to a survey of the industrial situation lately made, there are at present out of employment in the United States two million three hundred and twenty five thousand workers, many of whose families are now in great need; and Whereas we are advised by the presence of a resolution now before a committee of this body that there are three million five hundred thousand children in Europe on the verge of starvation and must die for want of clothes and food unless saved by the charity of the people of the United States; and Whereas we are now carrying a fixed debt of $21,000,000,000 and meeting current expenditures to the amount of about $4,000,000,000 per annum, with a deficit of nearly $2,000,000,000 confronting us; and Whereas the business of the country has advised us that it will be very difficult for business to meet the coming installment of taxes; and Whereas the party now in charge of the legislative department of the Government, and soon to be in charge of all the departments, pledged the people of this country in the last campaign that not one dollar should be appropriated from the Treasury of the United States except when absolutely necessary to meet the unavoidable expenses of the Government; and Whereas in the face of these burdens and sufferings, and in defiance of these pledges, and in the midst of great distress everywhere about us, it is proposed to provide for the most costly, the most expensive and ostentatious presidential inauguration upon the 4th of March, 1921, ever occurring in the history of this or any other country, thus drawing upon the Federal and State Treasuries for hundreds of thousands of dollars which the people in the end must pay; and Whereas it is proposed further to throw open certain public buildings and interrupt public business to the detriment and cost of the Government and the people of this country; and Whereas we have already provided, so far as this body is concerned for an expenditure of $50,000; and Whereas it is now proposed to appropriate other and further large sums of money; Now therefore be it resolved by the Senate (the House of Representatives concurring), that no other or further sums of money than that already provided for shall be appropriated from the Treasury of the United States to meet any of the expenses of the inauguration of March 4, 1921. Sec. 2. That no public buildings be vacated or that public business be in any wise interrupted to enable the holding of an inaugural ball.

TRANSPORTATION.

S. 4812. (*Reduction in rates.*) Introduced by Mr. Trammell; referred to the Committee on Interstate Commerce. The bill amends Section 15a, paragraph 3, of the Interstate Commerce Act by providing that on and after April 1, 1921, common carriers engaged in interstate commerce shall be authorized to make rates which will produce returns of not exceeding 4 per cent of the aggregate property value of the common carriers.

H. R. 15551. (*Amending Section* 204 *and Section* 209 *of the Transportation Act.*) Introduced by Mr. Winslow; referred to the Committee on Interstate and Foreign Commerce. The bill provides that the commission shall promptly certify to the Secretary of the Treasury the several amounts payable to the carriers. The Secretary is authorized to draw warrants in favor of each of such carriers upon the Treasury of the United States for the amount shown in the certificates. The bill provides an amount sufficient to pay the total of such warrants. It provides certain provisions in ascertaining the amounts that are payable to the carriers. Section 209 is amended by providing that as soon as practicable after the expiration of the guaranty period the Secretary of the Treasury shall pay the necessary amount to make good the guaranty to each carrier. Sufficient amount is appropriated to pay these amounts in full and certain regulations are made surrounding the guaranty or ascertaining what is due each carrier.

H. R. 15306. (*Amending Transportation Act.*) Introduced by Mr. Madden; referred to the Committee on Interstate and Foreign Commerce. The bill amends Section 301 and 307, 301 being amended by adding the following: (1) Upon written request for a conference between the carriers and the employees or subordinate officials thereof, being submitted either by the authorized representatives of the carriers or of the employees or the subordinate officials, the party so petitioned shall respond in writing within ten days from the date of the receipt of the request for such conference. (2) In order to secure the fullest and most representative expression of either or both parties to any dispute which might arise and which might be adjusted by and under this title, the right to organize is granted to the carriers or their representatives and to the employees and subordinate officials of the carriers or their representatives. Section 307 is amended by adding the following: To prevent the establishment of an inequality or inequalities of increases in wages or of treatment, the result of previous or possible future wage orders or adjustments, the predominant existing hourly or mileage units employed in computing time and on overtime, or the predominant existing rules and practices governing working conditions shall be standardized and applied alike to all classified carrier employees.

OIL

S. 4866. Introduced by Mr. Phelan; referred to the Committee on Naval Affairs. The bill provides that whenever the President shall make proclamation to that effect, it shall be unlawful to export from or ship from, or take out of the United States any petroleum or petroleu, products produced in the United States. A fine of $10,000, imprisonment for not more than two years, or both is imposed for violation of the provisions of the Act.

MONETARY

H. R. 15397. Introduced by Mr. Britten; referred to the Committee on Coinage, Weights, and Measures. This bill establishes a branch mint of the United States in the city of Chicago and appropriates $300,000 to carry out its provisions.

S. 4736. Introduced by Mr. Lenroot. Referred to the Committee on Finance. The bill provides that any person who was the original purchaser from the United States of any Liberty bonds or Victory loan notes, and has continuously owned the bonds or notes, may exchange them at par and accrued interest for United States notes to an equal amount. The bill provides that these notes shall bear interest at such rate as not to exceed such per cent as in the judgment of the Secretary of the Treasury will enable the notes to be sold at par in the market. Application for exchange is made through any Federal Reserve bank to the Secretary of the Treasury.

S. 4729. Introduced by Mr. McLean; referred to the Committee on Banking and Currency. This bill amends Section 7 of the Federal Reserve Act by providing that the net earnings derived by the United States from Federal reserve banks shall, in the discretion of the Secretary, be used to supplement the gold reserve held against outstanding United States notes, or shall be applied to the reduction of the outstanding bonded indebtedness. Should a Federal reserve bank be dissolved or go into liquidation, any surplus remaining, after the payment of all debts, shall become the property of the United States and shall be similarly applied.

H. R. 15303. Introduced by Mr. McFadden; referred to the Committee on Banking and Currency. The bill amends section 9 of the Federal Reserve Act by striking out the proviso in paragraph 10 and inserting the following: No Federal reserve bank shall be permitted to discount for any State bank or trust company notes, drafts, or bills of exchange of any one borrower who is liable for borrowed money to such State bank or trust company in an amount greater than that which could be borrowed lawfully from such State bank or trust company were it a national banking association.

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MINING IN FOREIGN COUNTRIES

S. 4747. (*Oil lands.*) Introduced by Mr. McKellar; referred to the Committee on Foreign relations. The bill prohibits the acquisition by any foreign government or by the nationals of any foreign government of deposits of oil or oil shale or any land containing such deposits, or any stock or bond interest in corporations owning such lands or deposits, or contracts for the purchase and development of the same, when the purpose is to export such products or otherwise use them in foreign commerce unless the same privileges are granted to citizens of the United States by these countries desiring to acquire such lands as is extended by the United States to such foreign countries. The same provisions surround the development of oil or oil shale. Section 3 of the bill provides that the Shipping Board is required to report on or before July 1, 1921, what foreign governments, etc., are violating the Act and if any, no oil or oil shale shall be exported to that foreign government. Penalties which are now in force under the Espionage Act, passed June 15, 1917, are applicable to those who violate the provisions of this Act.

ANNUAL ASSESSMENT

S. 4678. Introduced by Mr. Henderson; referred to the Committee on Mines and Mining. The bill provides that the period within which the work required to be done annually on all unpatented mineral claims shall commence on the first day of January, succeeding the date of location of such claim, and this section shall apply to all claims located since the 10th day of May, 1872, as to claims located on and after the 1st day of January, 1920, on the 1st day of July, 1921, and annually on the 1st day of July thereafter; or, if located subsequently to the 1st day of July, 1921, on the 1st day of July following the location of such claims, and annually on the 1st day of July thereafter; and, as to all claims located prior to the 1st day of January, 1920, such period shall commence during the year 1921 on the 1st day of July, and annually on the 1st day of July thereafter. The provisions of the bill extend to the territory of Alaska. This bill is similar to the emergency bill signed by President Wilson on December 31st, extending the time for 1920 work to July 1st, 1921.

H. R. 15686. (*Changing period of annual assessment.*) Introduced by Mr. Hayden; referred to the Committee on Mines and Mining. This bill is similar to all bills introduced along this line and provides that the time of annual assessment work be changed from January 1st to July 1st.

H. R. 15715, another assessment bill, introduced by Mr. Rhodes of Missouri, is practically the same as that introduced by Mr. Hayden.

FARM LOAN

H. R. 15302. Introduced by Mr. McFadden; referred to the Committee on Banking and Currency. The bill amends Section 20 of the Federal Farm Laon Act by providing that bonds provided for in this Act shall be issued in denominations of $40, $100, $500, $1,000, and such larger denominations as the Federal Farm Loan Board may authorize; they shall run for specified minimum and maximum periods, subject to payment and retirement, at the option of the land bank, at any time after the minimum period specified in the bonds, which shall not be longer than ten years from the date of their issue. They shall have interest coupons attached, payable semiannually, and shall be issued in series of not less than $50,000, the amount and terms to be fixed by the Federal Farm Loan Board. They shall bear a rate of interest not to exceed 5 per cent per annum.

METRIC SYSTEM

H. R. 15420. Introduced by Mr. Britten; and *S.* 4675 introduced by Mr. Frelinghuysen. Both referred to the Committee on Standards, Weights, and Measures. This bill is similar to those bills introduced in the last session of Congress providing for a metric system to replace our present system of measures and weights. This bill was reviewed in the March, 1920, issue of the Mining Congress Journal. The subject met with considerable opposition and got no farther than committee stage. These bills are both similar to the other bills which have been introduced upon this subject.

FOOD CONTROL

H. R. 15453. Introduced by Mr. Sinclair; referred to the Committee on Agriculture. The bill so amends Section 14 of the Food Control Act that it guarantees the minimum price of wheat to cover the crop of 1920 by extending the provisions of the Food Act to maintain the price of wheat at $2.26 per bushel at the terminal elevators.

TRADING WITH THE ENEMY

H. R. 15634. Introduced by Mr. Moores; referred to the Committee on Interstate and Foreign Commerce. The bill amends Section 9 of the Trading with the Enemy Act by striking out the clause "said citizenship having been acquired by birth in the United States" and by adding the provision that this sub-division shall not be deemed to apply to to any woman who was born in Germany or Austria-Hungary of parents originally subjects of either of those countries, who, after becoming American citizens by naturalization, had returned to the country of their original citizenship. Section 2 provides that all persons are relieved from any future duty of reporting any property of enemies or allies of enemies to the Alien Property Custodian.

BORON

H. R. 15445. Introduced by Mr. Sinnott; referred to the Committee on Public Lands. Providing that hereafter all deposits of boron minerals and lands containing such deposits, owned by the United States except deposits of potassium borates provided for in the Act approved October 2, 1917 (Forty Statutes, page 297), shall be subject to disposition only in the form and manner prescribed for the disposal of borates of sodium in the Act approved February 25, 1920 (Forty-one Statutes, page 437), entitled, "An Act to promote the mining of coal, phosphate, oil, oil shale, gas, and sodium on the public domain." A similar bill was introduced by Senator Smoot of Utah.

NATIONAL LOBBIES

S. 4867. Introduced by Mr. Overman; referred to the Committee on Judiciary. The bill provides that any person or any agent or counsel for any person, firm, company, etc., who shall attempt, directly or indirectly, by any corrupt or improper method to influence any Member of Congress to vote for or against any bill pending in Congress or shall attempt by any improper method to defeat legislation shall be punished upon conviction by a fine of $1,000 or not more than $5,000. The bill provides that if any firm, company, etc., employs any person to act in any manner as a legislative counsel in connection with legislation, they shall within one week after the date of such employment enter the name of the person so employed upon a legislative docket, which shall be prepared by the Secretary of the Senate and the Clerk of the House. In this docket is to be kept the names of all persons who appear at public hearings, the name and business address of the employer for whom such persons appear, the name and residence and occupation of the person employed, the date of employment and agreement therefor, length of time employment is to continue, and the subject of legislation to which employment relates. These dockets shall be public record and open to inspection by any citizen of the United States. No person shall appear as counsel before any committee of Congress or act as agent in respect to any legislation unless it appears upon the docket of legislation. A fine of not less than $200 or more than $5,000 is imposed for violation of the act.

S. 4868. Introduced by Mr. Curtis; referred to the Committee on Judiciary. The bill is substantially the same as *S.* 4867.

GOVERNMENT CONTRACTS

H. J. Res. 443. (*Contract forms.*) Introduced by Mr. Britten; referred to the Committee on Judiciary. The resolution provides that the President be authorized to appoint a board from among the officers and employees of the executive departments, who shall serve without additional compensation, whose duty it shall be to devise a harmonious system of forms to be used by the several departments and independent establishments in the execution of contracts on behalf of the United States. The board will report its conclusions to the President, and the system devised by it will, upon the approval of the President, become effective, and will thereafter be used in all contracts made by the executive departments and independent establishments of the Government. The expenditure of the sum of $10,000, or so much thereof as shall be necessary, is authorized for the clerical and other expenses of said board.

GEOLOGICAL SURVEY WANTS A DEFINITE PROGRAM.

THE U. S. GEOLOGICAL SURVEY needs a definite and continuing program, according to the belief of its Director, Dr. George Otis Smith.

"During the 40 years of its existence, the Geological Survey's policy has been to contribute material for a national plan to gain scientific knowledge of the Nation's mineral resources, yet the greatest need of the Geological Survey to-day is a plan for itself—a program," Dr. Smith said. "The recognized function of a scientific bureau is to collect and arrange facts upon which the nation may base its plans for future development, but the Geological Survey now finds itself unable to plan adequately its own development. It lacks that assurance of continued appropriations that would encourage or warrant long-term investigations, a few of which are absolutely essential to any forward looking program of scientific research. The increasing gap between the government scale of professional salaries and the scale prevailing in commercial employment causes a continual change in personnel that makes the administration of scientific work almost hopeless. The responsible official, in arranging to have the work done that is most needed, actually has his choice of projects determined for him by the personnel available. For each scientist of fully tested ability available the choice has to be made between several pieces of work, all of which deserve immediate attention. Even less satisfactory is the situation in which an urgent call for a geologic field examination has to be met by assigning to it an untried worker.

"The net result is that the Geological Survey is not fully occupying the field which is recognized as peculiarly its own. It could, however, occupy that field. With slightly increased appropriations, and especially with the declaration of intent by Congress to regard the scientific bureau as having successfully passed its probationary period, greater stability might be expected and some progress might be made in the adoption of a program fitted to the country's needs."

PERSONALS

John C. Howard, director of the American Mining Congress, was in Washington for several days during the month on matters before the General Land Office. After a short stay in New York, he has returned to his home at Salt Lake.

Jerome J. Day spent several days in Washington during his eastern trip early in January. He has returned to his home at Wallace, Idaho.

Otto Ruhl represented the lead and zinc producers of Missouri and Oklahoma before the Ways and Means Committee in their hearings on the question of a zinc tariff, January 13.

Imer Pett, Governor of the Utah Chapter of the American Mining Congress, spent spent several days at Washington headquarters before returning to his home at Salt Lake.

Charles Potts of Deerwood, Minnesota, spent some time in Washington during the month on matters before the War Minerals Relief Commission.

A. Scott Thompson is again at Miami, Oklahoma, after spending several weeks in Washington.

Ernest Bamberger represented Utah lead producers at hearings before the Ways and Means Committee on the question of tariff held January 13.

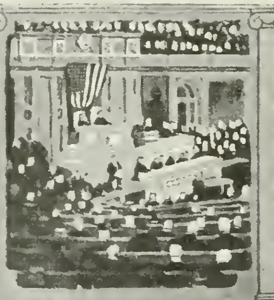
Clinton R. Crane of the St Joe Lead and Zinc Company was in Washington during the month conferring with Mining Congress officials on matters of importance to the industry.

Edgar Palmer of the New Jersey Zinc Company was a caller at the offices of the Mining Congress January 12.

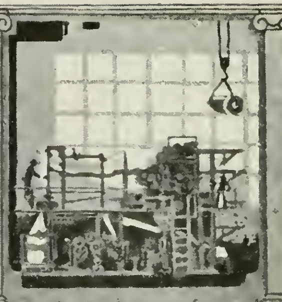
H. P. Baker of the New Idria Quicksilver Company is in Washington in the interest of the quicksilver producers in the matter of a revision of the tariff laws.

Judge Sanner of the Ophir Hill Mining Company and the Clark interests was in Washington during the month on matters before the Revenue Department.

W. Mont Ferry of Salt Lake City, Utah, was in Washington during the month.



PUBLIC OPINION



CONGRESSMAN FESS, in opposing the Emergency Tariff Measure, sounds a note of encouragement which the MINING CONGRESS JOURNAL is glad to repeat, particularly in these days when so much of pessimism has been voiced:

"We are in the process of readjustment, known in the business world as liquidation. It is the stage of returning to normal, where the laws of trade operate upon economic lines, where the law of supply and demand again is permitted to operate without the interference of government either to retard or to artificially stimulate. Everybody should assist in getting away from the war basis of abnormal cost of production. We can not reduce the cost of living and at the same time keep up the abnormal cost of production. In this process of liquidation all classes will suffer the evil effects of over-stimulus of war, because the nation will find an overproduction without a corresponding amount for consumption. The transportation system is now rapidly getting on a sound basis, so that from that source—the most important—we need have little fear.

"Upon every hand we note a marked increase in labor efficiency, which is one of the most hopeful symptoms of the future. Our wealth is intact and only awaits the application of sound business principles again. In my opinion, we should guard against the clamor for unwise legislation at such a period. It can at best be merely palliative and will only defer the day of accounting if we refuse to see the real situation. If the Federal Reserve system will ever break down it will be because it is a government institution which will become responsive to the clamor for government relief of various unfortunate situations which appeal for aid through government loans. I believe in the principal of 'less government in business and more business in government.' Congress should treat the matter of war liquidation as a business proposition. Any attempt at Government financing will involve possibilities fraught with danger. Labor will be justified in demanding government subsidies to keep up wages to tide over. Liquidation must come. War levels can not be permanent. All classes should assist in readjustment. Where relief by law can be lent it should not be witheld. But the remedy must not be worse than the disease, and the public must not be deceived by promises that cannot be kept."

CONGRESSMAN ROGERS of Massachusetts, in discussing the Emergency Tariff Measure and basing his objection thereto upon the fact that it is class legislation, said:

"I believe in the principle of the protective tariff. But a protective tariff is justifiable only if it is universal; only if it comprehends in its protection all American-made products which need protection. Industry is hard hit. It needs protection. It recognizes that agriculture also needs protection. It does not ask something for itself it is unwilling to extend to its fellow. On the selfish ground alone no one industry in our country, however great, can prosper if men and women in other occupations are out of work, for the necessary market then is lacking. Prosperity or adversity in the United States is not local, it is nation wide."

CONGRESSMAN LONGWORTH in urging a protective tariff, advances the sound argument that before we pass hasty legislation some conception must be gained of conditions upon which to base protection. In part, he said:

"The principal of protection is founded upon the equalization of the relative costs of production of articles between this and the competing countries. Is it going to be possible under such conditions to arrive at the information upon which a thoroughly scientific protective tariff may be founded? I fear that it will be many months before a tariff law which will endure the tests of time and experience can be passed in both Houses and signed by the President. The policy enunciated by President McKinley is a safe one. He insisted upon the complete preservation of the home market as the prerequisite for the making of any arrangement with any foreign nation under which they might have certain advantages in dealing in our market, and that only under condition that we should have certain advantages in dealing in theirs. President Wilson proposes that we take down the bars against the world in order to enable certain nations of Europe to dispose of thirteen billion dollars worth of goods here. Against such a policy the American people have recorded themselves, as I interpret the result of the recent election, by an emphatic and tremendous majority. We have received no specific instructions with regard to the adoption of the policy laid down by President McKinley, but I believe it to be in no way inconsistent with the instructions we have received, and that if we shall determine to legislate so far as the tariff is concerned with a view to making the debts of the allies more easy of collection, that it is through reciprocal trade agreements that we can best and most effectively accomplish it. I adhere rigidly to the belief that there is nothing inconsistent in retaining our home market and at the same time occupying a position of commanding influence in the markets of the world. I am prepared to go far to help those nations toward financial and industrial rehabilitation who have suffered far more than we as a result of the war, particularly those whose soldiers fought side by side with us for the preservation of Christian civilization, but I insist that it must never be at the sacrifice of the industrial independence of America."

Everybody Has a Favorite Appropriation Measure

THE COMPLETE REVERSAL of the attitude of Congress in the appropriation of moneys for Federal expenditure has been apparent in the discussion of the appropriation bills which have been before Congress.

SENATOR CHARLES S. THOMAS of Colorado, who consistently decries the unbusinesslike expenditures of large sums of money, in discussing the appropriation bill, said:

"So long as money obtained by appropriation bills from the Treasury is to be administered and expended locally, so long will we continue to saddle upon the national government both the possession and the performance of those important duties and obligations, which is but another name for the exercise of local self-government. In other words we are wiping out the actual distinctions between the states with their consent and approval and active cooperation and substituting a huge central authority in its place and substituting also for the local powers federal bureaus and boards and agencies, with their headquarters in Washington and their myrmidons spread all over the country. The lice in Egypt were scarcely thicker than the federal employees of the United States, scattered from the Pacific to the Atlantic, each representing in his own opinion the sovereignty and majesty of the republic and sometimes making and enforcing his own rules upon the people, occasionally in harmony but frequently in conflict with statute law, thus making the city of Washington the county seat of practically every county in the United States.

"What has not yet been bureaucratized will be before the nation is five years older. I think I am safe in asserting that one-half of the bills that are enacted into law by Congress require for their operation and administration a bureau or a board or a commission, and once it is created it is immortal. It defies time, tides, and the threatening processes of political instability. It is here to stay, and any attempt to remove it is met by the opposition of the organized employees and representatives of it, backed by every other organization of similar character, with the result that we damn them in the cloakroom and vote for them in the Senate.

"I will guarantee that I can take any measure that has promise for an appropriation for local expenditure and I can get the support for it of practically all of the men and all of the women of the state where the money is to be expended. It counts, of course; it counts so much that we legislate here not according to our convictions but according to the demands of our constituents; in other words, we are no longer Senators; we are delegates; we are rubber stamps. We used to keep one ear to the ground, but now we keep both, and as soon as we think we know what the prevailing sentiment is at home we make up our minds. As a result leadership, statesmanship, originality of legislation, the standards of the Congress and of legislatures have been transformed, and when the whip cracks outside we get into line. This is bureaucracy in action. With our civil service organized and affiliating with the American Federation of Labor, and with all the other organizations of a kindred character united we can now, under such pressure, easily pass a resolution in Congress dissolving the Union or declaring war against Great Britain or opening trade with the Bolsheviki or take any other action that seems to have behind it sufficient pressure of a potential political character.

"There used to be a play when I was a young man called 'Mulberry Sellers in the Gilded Age,' the chief character in which always ended his rhapsodical statement to his friends, 'I go in for the old flag and an appropriation.' So do we; we stand when we hear the music of the Star-Spangled Banner and proclaim our one-hundred per cent Americanism, and support all the appropriation bills for which we get a chance to vote."

Conservation As Opposed To Hoarding

THE TRYING PERIOD just behind us has perhaps dimmed and caused us to neglect a very important subject—Conservation. M. L. Requa, in an address before the American Petroleum Institute, advocates not only conservation in its best form but the cooperation of those producers of raw materials to the end that the country may be enlightened as to the needs of industry. In part he says:

"We are beginning to realize that we cannot with impunity draw indefinitely and wastefully upon our natural resources; we cannot shut our eyes to the evolution that is continuous from generation to generation, or as individuals burn the candle at both ends, without sooner or later being confronted with a day of reckoning. The seriousness—or perhaps the hopelessness—of that day is entirety dependent upon the speed with which each individual in the nation is made familiar with the facts and is educated through proper and wise efforts to an intelligent comprehension of the fundamentals involved. Whether this education will assure upon the part of the public intelligent and constructive demands, in place of those ill-considered and unwise in character which have been so much in evidence in the past, depends in large part upon industry itself.

"Government, on its part, has an obligation to perform that may be summed up in the words of Theodore Roosevelt, who said: 'This nation must get out of the business of politics and into business of government.' We must demand of our public officials that same high type of citizenship which we demand of our individual citizens; the welfare of the individual and the party must give way to the public welfare; and if both government and industry will approach in this spirit the problems that are with us today and that are to arise in the future, satisfactory solution is a foregone conclusion.

"In handling our great national problems of conservation we shall, of course, make little or no headway unless and until the weight of public opinion is thrown affirmatively into the balance in favor of the proposal, whatever it may be. And in turn it may be truthfully said that public opinion can be aroused only by proper presentation of a meritorious cause.

"If we are to achieve success, it goes without saying, that the facts must be truthfully presented and that mutual confidence, must be established, as between the public on the one hand and the purveyor of facts upon the other. These facts must be statements of truth, presented in the form of cold unemotional statistics and precise statements that speak for themselves and that need no specialist or expert to construe them.

"Unfortunately, conservation, in the minds of many, has become confused with hoarding—the withdrawal from immediate use; in short, sabotage as related to raw materials. For years the coal of Alaska has remained unmined, in large part because of regulations impossible of performance when balanced against commercial necessity and a profit justifying the investment. The water-powers of the West have in the past failed to receive adequate development and utilization because of similar folly in promulgation of regulations; and it is only after ten years that any solution of the leasing of withdrawn petroleum lands has been forthcoming, and even after these years of weary waiting that measure, as I view it, leaves much to be desired.

"True conservation is not hoarding, but the wise use of natural resources; and it implies not merely the preserving in unimpaired efficiency, but also a wise and equitable exhaustion with a maximum efficiency and a minimum waste.

"While it is important that we practice conservation—that is, use our heritage wisely and well—we can prove that, most of all, its highest development and practice should be, must be, by those who win the minerals from the earth's crust. In many a lonely canyon, upon many a rugged mountain-side and desert waste throughout the West, stand idle mining plants once the scene of feverish activities, now peopled only with ghosts—abandoned and decaying; forlorn sentinels upon the highway of progress; marking the passing of some portion of our natural resources; grim reminders of the fate that in time will be the destiny of all our mineral reserves. Because the outcrops of those deposits were upon the surface—easily found and easily exhausted—they afford a striking example of the truth of the statement that our natural resources are far from limitless.

"More and more it is being recognized that great industries dealing in the basic commodities essential to the industrial life of the nation owe a service obligation that must be discharged.

"I have been told more than once that my faith in the ability of the industry to govern itself is misplaced; that the individual interest was supreme and often ran counter to public interest; that selfish considerations precluded the success of my highly idealistic and impractical belief; that because certain very necessary results had been accomplished in war time it did not at all follow that similar results could be expected or accomplished in time of peace; and that, some day, I should awaken and find myself disillusioned.

"Notwithstanding the prophecies of disaster, I am still strong in my belief; if for no other reason, because I think it a matter of industrial self-preservation. The underlying fundamental truth seems to me absurdly simple. Either the industry must, through self-government, prove its ability to meet and successfully deal with the economic forces confronting it, or, sooner or later, those forces will compel recognition and action on the part of the government. It is not a question of ignoring a condition, but rather of choosing the course to be followed. For we shall, regardless of our wishes, be forced to follow some road—either that of industrial cooperation and conservation, or of government dictation.

"Government aid may be required. When it is, it can be asked for; but the task is emphatically one for the industry itself to perform, if it is to be done efficiently and properly. And so long as it is done efficiently and well, there is neither cause nor justification for governmental interference.

"Because I have seen the tragic inefficiency and waste of governmental Washington I am convinced that the petroleum industry can most efficiently perform its service through self-government and regulation, asking for legislation only to make more effective rational activities. I have a horror of government control or supervision, save in its broadest terms, because I know it spells less efficiency on the part of the petroleum industry; but it is obvious that that control will be exercised if we, the petroleum industry, fail in self-government.

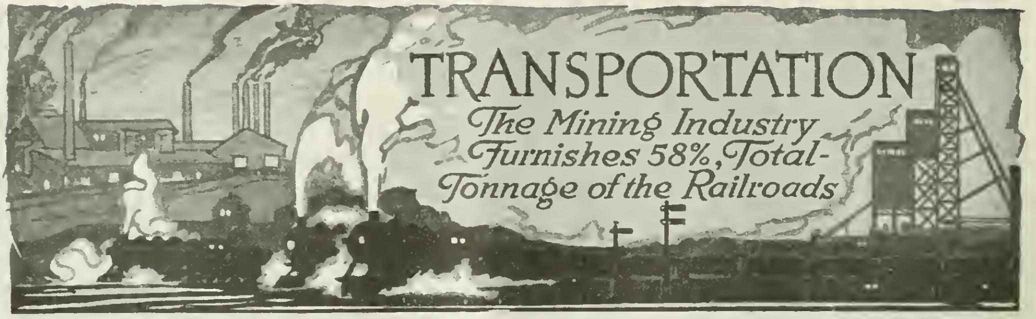
"We must make it our task to present to the public the problems of the industry, truthfully and adequately, to the end that we may retain that confidence and cooperation necessary in permitting us freedom of action in the performance of satisfactory service. And in so doing we shall come to realize that our responsbility as trustees in the administration of one of the nation's greatest assets, our obligations to the public, to our stockholders, and to ourselves, can be satisfactorily and successfully performed only by the practice of cooperation and conservation."

Labor, Industry and the Open Shop

IN THE SINCERE EFFORT to reach some basis satisfactory to employer and employee in the abolishment of strikes or lock-outs, much has been written and various theories advanced. Walter Gordon Merritt, in an article upon "Social Control of Industrial Warfare," has the following interesting comment to make:

"As soon as society tolerates the rule that a man shall not pursue his trade except he be a member of a particular union, and that an industry will not be allowed to function except through that union, it artificially protects that union from the ordinary laws of reward and punishment and removes all incentive for good conduct.

"If unions are to progress by service rather than by force, and society is to furnish an incentive for such service, the cause of human liberty must be protected so that any workman will not be seriously impeded in the exercise of his fundamental rights of citizenship merely because he is not a union man. Any other policy is monopoly in its worst form and with its worst consequences. It is only when unionism is subject in some degree to the wholesome forces of competition on the part of those employers and employees who may be abused by it that the processes of moral restraint will be operative."



EIGHTY SEVEN COMPANIES ATTACK IRON ORE FREIGHT RATES

By C. H. Farrell

THE LAKE SUPERIOR IRON ORE ASSOCIATION, on behalf of eighty-seven different mining companies operating in Minnesota, Michigan and Wisconsin, has filed a complaint with the Interstate Commerce Commission attacking the rates on iron ore, in carloads, from points on the Mesabi, Vermilion and Cuyana Ranges to Two Harbors and Duluth, Minnesota and Superior, Wisconsin; from points on Menominee Range to Escanaba, Michigan; from points on the Gogebic Range to Ashland, Wisconsin; from points in the Gwynn, Princeton and Republic Districts on the Marquette Range to Marquette, Michigan; and from points in the Negaunee District on the Marquette Range to Marquette, Michigan. The complaint recites that the rates now in effect are the result of successive increases published since the commission established reasonable iron ore rates in a proceeding a few years ago and that they had become, prior to the increases, through changing conditions, unjust and unreasonable in and of themselves. The increases made during federal control, under stress of war conditions, are said to be emergency rates which should have been withdrawn as soon as the emergency passed, and the contention is made that reasonable rates on this traffic, including all service from the mines until the ore reaches the hold of the vessels, should not exceed the cost of the services plus six per cent per annum on the reasonable value of the property investment required in the performance of this transportation service because rates in excess thereof are equivalent to a rebate to the United States Steel Corporation which controls two of the common carriers which, combined, haul more than half the entire iron ore tonnage. This complaint has been served by the commission upon the carriers in interest, and will be assigned for hearing in the ordinary course of events.

COST AND TONNAGE OF RAILROAD FUEL IN 1920. The Interstate Commerce Commission has instituted a proceeding of inquiry and investigation with a view of ascertaining the facts regarding the increased cost of railroad fuel to the railroads of the United States during the year 1920 as compared with the year 1919.

This investigation will be assigned for hearing in due course and is the result of a resolution of the Senate asking for the facts referred to above, as well as a statement of the tonnage of railroad fuel in 1920, its total cost, its average cost per ton, and the average cost per ton of railroad fuel in 1919, to the end that the difference in cost between the two years may plainly appear.

CONSTRUCTION AND REPAIR OF RAILWAY EQUIPMENT. The Commission, upon its own motion, has entered upon a proceeding of inquiry and investigation into the reports that common carriers have caused and are causing certain of their locomotives and other equipment to be constructed and repaired at construction or repair shops other than their own and have purchased and are purchasing, from or through such shops, material and supplies used in such construction and repair at costs in excess of those for similar construction and repairs in their own shops, including material and supplies therefor, in disregard of efficient and economical management, resulting in unreasonable expenditures and otherwise contrary to law. Reports to this effect were first circulated by representatives of the railroad brotherhoods and have been given considerable publicity. The Association of Railway Executives, through S. M. Felton, president of the Chicago Great Western, has recently replied to the charges of the brotherhoods and has stated, in substance, that the railways, upon the termination of federal control, found themselves confronted with the necessity of handling an unprecedently large freight business with an abnormal number of their locomotives and cars needing heavy repairs, due to the hard usage and inadequate maintenance during federal control. On account of the eight-hour day, the abolition of piece work and the shortage of labor, the carriers found the capacity of their shops for making repairs less than in former years, Mr. Felton said, and although the shops were worked to the limit of their capacity some of the roads found it impossible to do all the repair work in their own shops and gave the surplus to outside plants. Mr. Felton refers to this surplus as relatively very small. Taking the figures of the labor brotherhoods, he states that the carriers had 617 locomotives repaired in outside shops, and if this figure is correct, which Mr. Felton doubts, it is les than one per cent of the total number of locomotives owned by the carriers, this number being 65,000. Taking the figure of the brotherhoods on freight cars repaired in outside shops, which was said to be 30,000, the per cent of the total number of freight cars repaired in outside shops is less than 1.3 per cent of the total number of freight cars owned. That number is given as 2,400,000. Mr. Felton thus reaches the conclusion that the amount of work given to outside shops was extremely small compared to the amount done in the railroad shops, and that this outside work was made necessary by the heavy traffic demands and the various other reasons already referred to above. It is to be noted, however, that Mr. Felton compares the equipment repaired with the total amount owned and not with the total amount repaired. He also states that the orders for repairs in outside shops have been reduced rapidly or cancelled as the freight business began to decline, and that reductions in shop forces had been made because of this decline and not for the purpose of giving work to outside shops.

RATES ON SMELTER PRODUCTS. The commission has suspended until April 29 the operation of various tariffs filed by Agent Gomph on behalf of carriers carrying smelter products, in carloads, from Nevada and Utah to points in California. These tariffs provide for reduced commodity rates on shipments of smelter products between the points mentioned instead of the class rates now in effect.

RAILWAY SUPPLIES.—Section 10 of the Clayton Act passed some time ago, which has been suspended by Congress from time to time, finally went into effect on January 1, after the President had vetoed a further suspension of it. This section prohibits the carriers from purchasing supplies and materials in excess of $50,000 in any one year except through competitive bids from companies in which purchasing agents or officials of the railroads are financially interested. Senator Frelinghuysen has proposed a substitute for this section and hearings have been conducted on it. The position of the carriers is that they have no objection to the underlying principle of the section, but that they do think it should be amended so as to be workable, citing, as an example, the effective section which might be construed to prevent a parent carrier from disposing of supplies and materials to a subsidiary carrier except through bids. Request was also made that the section be amended so that it would not be mandatory upon the carrier to accept the lowest bid received for supplies or materials, but that carriers be allowed to exercise their judgment in connection with such transactions so that if a still lower price could be obtained they would be at liberty to accept it if they saw fit or could refuse all bids offered. The carriers also denied that they had been delinquent in seeking amendment of this act and stated that war conditions had been largely responsible for the present situation.

GUARANTY TO RAILROADS. Following refusal of the Secretary of the Treasury to pay to carriers amounts certified by the Interstate Commerce Commission as due under the Transportation Act until the commission could issue a final certificate of all amounts that would be due, the carriers have attempted in two ways to get partial payments of the money in question. First, mandamus proceedings were brought in the Supreme Court of the District of Columbia to require the Secretary of the Treasury to make these partial payments regardless of the fact that the commission could not certify for some time to come the entire amount due. The Supreme Court of the District of Columbia held with the Secretary of the Treasury, and the question has been appealed to the Court of Appeals of the District of Columbia, where it now rests. Second, a bill was introduced in the House of Representatives by Representative Winslow, of Massachusetts, authorizing the Treasury Department to make these partial payments. Hearings on this bill have been conducted and the carriers, through their various representatives, have contended that these amounts are due to them as a matter of right and are necessary for the proper operation of the railroads and should not be held up further. The proceeding in court will undoubtedly be appealed to the Supreme Court of the United States, and even if it is ultimately successful it will be a long time before the carriers can get their money. Therefore, the railroads contend that the Winslow bill should be passed and the Treasury authorized to honor certificates of the commission for partial payments instead of waiting, in some instances for years, until the final accounting can be made and the whole amount stated in one lump sum.

EARNINGS. For the month of November the carriers in this country report a net railway operating income of $57,741,937, which is $41,544,063, or 41.8 per cent below the amount which it was estimated would be earned under the increased rates fixed by the Interstate Commerce Commission. On this basis the carriers would earn annually approximately 3½ per cent on the value of their properties as tentatively fixed for rate-making purposes by the commission. The operating income, however, for November, 1920, was an increase of 170.8 per cent over that for November, 1919, but this increase is, of course, principally due to the strike of bituminous coal miners during November of 1919. Since the carriers assumed entire responsibility for their lines on September 1, that is, for three months, the operating income has been $219,507,735, which is $101,449,265 less than was expected under the increased rates. On this basis the carriers would earn 4.1 per cent annually. For November in the eastern district the net operating income compared with last year showed an increase of 527.6 per cent, the operating revenues increased 46.9 per cent, while the operating expenses increased 33.5 per cent. For the southern district operating income increased 150.3 per cent, operating revenues 27.1 per cent, while operating expenses increased 22.6 per cent. In the western district the increase in operating income was 32.1 per cent, in operating revenues 26 per cent, and in operating expenses 27.3 per cent.

Quicksilver Needs Protection.—Senator Phelan of California recently brought to the attention of the U. S. Senate a joint resolution passed by the senate and the assembly of California asking for a protective tariff on quicksilver. All California quicksilver mines are said to be either shut down or in the hands of receivers, their plight being due to competition of convict-produced quicksilver imported from Spain.

JOHN HARVEY NEW CHIEF CLERK OF INTERIOR DEPARTMENT

JOHN HARVEY, assistant and secretary to Secretary of the Interior John Barton Payne, has been appointed chief clerk of the Interior Department, succeeding Ezekiel G. Ayres, who held the position for six years. Mr. Harvey assumed the duties of his new office January 15.

JOHN HARVEY

Mr. Harvey entered the government service as clerk, August 21, 1901. He was appointed clerk in charge of publications of the Interior Department in 1917 and was made Chief of the division of appointments, mails and files in 1918. He was appointed assistant to Secretary Payne on March 16, 1920. Mr. Harvey was private secretary to four different first assistant Secretaries of the Interior in succession, Frank Pierce, Samuel Adams, Andrieus A. Jones (now senator from New Mexico), and Alexander T. Vogelsang.

The new chief clerk comes from Texas, having been born at Denison on December 8, 1877. He took the examination for the civil service while employed by the M. K. & T. Railroad at Greenville, Texas. He is an ardent fisherman and at the Christmas celebration of the Interior Department he was presented with a rod and reel and unofficially designated as the Izaak Walton of the Interior Department.

MORE THAN 3,000 APPLY FOR PROSPECTING PERMITS

NEARLY 6,000 ACRES of land in Wyoming were classified as within producing oil and gas structures by the Secretary of the Interior during December. This brought the total area thus classified under the act of February 25, 1920, up to 353,654 acres.

Two-thousand four-hundred acres in Alaska, valuable for the development of water power, were withdrawn during the same month. This brings the total area of lands thus withdrawn to 2,591,029 acres.

During the month 439 applications for oil prospecting permits were reported on. The total number of oil prospecting applications reported on since July 1, 1920, was thus brought to 3,180.

POWER APPLICATIONS PASS THIRTEEN-MILLION MARK

SINCE THE APPROVAL of the Federal Water Power Act, on June 10, 1920, applications involving thirteen million horsepower have been presented to the Federal Power Commission and others are coming in daily. This amount is five times greater than the total acted upon by the government in the preceding twenty years. It equals the combined installation in hydro, steam and gas, in all the central electric stations, commercial and municipal, which had been constructed in the United States up to 1917. It is 60 per cent greater than the present developed water power of the United States, and is approximately 75 per cent of the developed water power of the world.

Executive Secretary O. C. Merrill is the only paid employee of the Federal Power Commission. He holds this distinction because the commission was not given authority to hire anybody else. He has thirty-one field investigators and other assistants, all of whom are furnished by the War, Interior and Agricultural Departments. The commission recently issued a statement that the development of water power projects (all of which call for an expenditure of two billion dollars) will be held up unless the commission is given authority to use the appropriation it now has for the employment of personnel, and unless it is given necessary appropriations in succeeding years.

RESCUE CAR ITINERARIES.

Car No. 3, in charge of J. V. Berry, foreman miner, will remain at Alicia, Pa., till February 4, and thereafter pursue the following itinerary: Republic, Pa., Feb. 5–11; Grays Landing, Pa., Feb. 12–18; Star Junction, Pa., Feb. 19–25; Uniontown, Pa., Feb. 26–March 4; Oliver, Pa., March 5–11; Connellsville, Pa., March 12–18.

Car No. 8 working from the Pittsburgh station of the Bureau of Mines, and in charge of Archie Forbes, foreman miner, will remain at Tams, West Virginia, until February 5, and will carry out the following itinerary during the month: Statesbury, West Virginia, February 5 to February 12; Winding Gulf, West Virginia, February 12 to February 19; Pemberton, West Virginia, February 19 to February 26.

Car No. 10, with A. T. Martinson, foreman miner, in charge, will remain at the Rogers mine, Iron River, Mich., until Feb. 5, and thereafter pursue the following itinerary: James mine, Iron River, Feb. 7–12; Bates mine, Iron River, Feb. 14–19; Caspian mine, Caspian, Mich., Feb. 21–26; Warner mine, Amasa, Mich., Feb. 28 to March 5; Balkan mine, Alpha, Mich., March 7–12.

Car No. 1, with J. M. Webb, foreman miner, in charge, will remain at Seagraves, Ky., until Feb. 4, and thereafter proceed as follows: Kentenia, Ky., Feb. 5 to 10; Evarts, Ky., Feb. 11 to 16; Harlan, Ky., Feb. 17 to 23; Copper Hill, Tenn., Feb. 28 to March 9.

GOVERNMENT INCOME FROM OIL LEASES.—The sum of $6,780,000 had been tendered the government on January 1 in back royalties by oil companies applying for leases within the San Francisco field division Of this amount, $2,870,000 came from oil produced outside the naval reserves and $3,910,000 from oil produced inside the naval reserves. Estimates place the yield of land embraced in these applications at 310,000 barrels per month which, at increased rates which will be fixed in the leases, will amount to $100,000 per month.

Conducted by John Boyle, Jr.

1,359,496 and 1,359,497—*F. G. Gasche*, Chicago, Ill., Nov. 23, 1920.

Method and Apparatus for Concentrating Ores, consisting in initiating an ore laden aeriform stream at a given velocity and static pressure, discharging the same into a confined atmosphere having substantially the same static pressure as the discharging stream, whereby lateral dispersion of the ore particles is prevented, thereafter converting said static pressure of the stream into kinetic energy, thereby imparting high velocity to the ore particles and in issuing the high velocity stream against the separation atmosphere.

1,360,053—*F. J. Stumpf*, Mount Washington, Mo., Nov. 23, 1920.

Oil Well Cleaner.

1,360,116—*C. V. King*, Shenandoah, Pa., Nov. 23, 1920.

Jig for Separating Coal and Light Material from Foreign Matter having an inclined perforated plate forming the bottom of the separating chamber, a settling chamber at the forward end of the plate, a vertical partition between the separating and vertical chambers, said partition having its lower end disposed above the perforated plate, thereby forming a passage between the said chambers.

1,360,404—*G. S. Hollister*, Boston, Mass., and *E. V. Cooper*, Newton, Mass., assigned to the Oil Well Renewal Co., Nov. 30, 1920.

Oil Well Heater comprising insulating cores, resistance coils, and coil connecting wires engaged with said cores, a liquid tight casing therefor, a conducting cable composed of elongated lead wires, an oil resisting flexible shield enclosing the exposed portions of the lead wires outside the casing and constituting a liquid type package.

1,360,666—*L. D. Mills*, San Francisco, California, Nov. 30, 1920. Assigned to the Merrill Co.

Process of Extracting Copper from its Ore. The step of using finally divided, freshly reduced iron as a means for precipitating copper from its solution.

1,360,703—*Charles Allen*, El Paso, Texas, Nov. 30, 1920.

Slime Pulp Thickener, comprising a tank, a fluid compartment having flexible walls disposed within said tank, a float chamber disposed above said compartment and in communication therewith, a float in said chamber for registering variations in the density of the pulp, means for regulating the buoyancy of the float, and for connecting it with a discharge orifice whereby the liquid discharge is of a predetermined density.

1,360,816—*Peter Taylor*, Ottumwa, Iowa, Nov. 30, 1920.

Mine Car Wheel in which there is a reinforcing partition extending across the hollow hub and having radial projections embedded in the spokes of the wheel.

1,360,913—*E. Forrest*, Caney, Kansas.

Gas Trap for Wells having an inlet for liquid, a trap controlling said inlet which permits liquid to enter the inlet and which excludes gaseous fluid, a valve which normally closes said inlet, and means actuated by the level of the liquid for opening said valve.

1,360,997—*F. H. Armstrong*, Vulcan, Michigan, Dec. 7, 1920.

Shovelling Machine.

1,361,171—*Carl Neilsen* and *Olaf Hellelund*, Lillebo, Gruber, Norway, Dec. 7, 1920.

Discharging Device for the Heaviest Ore in Jigs comprising an upwardly extending chute, said chute having open sides, a gate adapted to close part of said open side and having a discharge opening to permit part of the chute to remain open for the passage of ore there through, the heavier ore collected in said receiving chamber being washed up said chute and through said discharge opening by the impulses of the water.

1,361,205—*P. C. VanZandt*, December 7, 1920, assigned Allis Chalmers Mfg. Co.

Combination Mill and Process of Grinding, comprising a tube mill provided with primary and secondary grinding chambers, consisting in grinding the material in said primary chamber and then in said secondary chamber at a normal grinding level, changing the relative capacities of said chambers and maintaining the normal grinding level therein and subsequently continuing the grinding operation in said chambers as changed.

1,361,280 and 1,361,281—*R. C. Newhouse*, Wauwatosa, Wis., Dec. 7, 1920, assigned to Allis Chalmers Mfg. Co.

Comminuting Mill comprising a rotary shell, a head dividing said shell into chambers, said head comprising a wall, a continuous annular screen extending longitudinally and transversely of said wall, and a conveyer rib between said screen and said shell.

1,361,282—*W. E. Nolan*, Tulsa, Oklahoma, Dec. 7, 1920.

Method of Sealing Oil Wells consisting in electrically heating the walls of the water bearing and caving strata to cause the melting and coalescing of the material of the walls.

1,361,432—*I. R. Margetts* and *W. Fagergren*, Salt Lake City, Utah, Dec. 7, 1920.

Flotation Machine comprising a water tight housing, a rotary impeller therein, a shield over said impeller, baffles above the shield, means for supplying air to the interior of the impeller and for supplying pulp to the interior of the housing.

1,361,674—*S. H. Boylan*, Joplin, Mo., Dec. 7, 1920.

Operating Mechanism for Ore Concentrating Tables.

1,362,116—*F. Laist* and *J. O. Elton*, Great Falls, Mont., Dec. 14, 1920 assigned to Anaconda Copper Mining Co.

Process of Extracting Zinc from Ores comprising leaching the ore with dilute sulphuric acid in quantity insufficient for complete extraction of the zinc; electrolyzing the zinc sulphate solution with insoluble anodes to produce metallic zinc and a dilute acid solution, returning a portion of the said acid to the primary ore leaching operation and another portion to leaching the residue from the primary leaching operation.

1,362,370—*J. T. Terry*, Jr., Salt Lake City, Utah, Dec. 14, 1920, assigned to Metals Recovery Company.

Flotation Apparatus comprising a tank having inclined porous sides decreasing in thickness from top to bottom.

1,362,716—*R. T. McKeen*, Chicago, Ill., Dec. 21, 1920.

Coal Loading Device comprising a power shovel, a pit car, means carried by the shovel for supporting coal and means carried by the car for engaging the coal supporting means for retaining the latter on the car when the shovel is withdrawn.

1,362,889—*N. A. Newdick*, Columbus, Ohio, Dec. 21, 1920.

Coal Loading Machine.

1,362,958—*J. A. Nolan*, Bowerston, Ohio, Dec. 21, 1920.

Mine Car Gager.

Mining and Petroleum Digest

BETTER TIMES AHEAD

THE MINING OUTLOOK is bright. This is the way it appears to the *Denver Mining and Financial Record*, which takes great encouragement from the increasing number of inquiries after property for developmental purposes. We read:

"It is pleasing to note that a good inquiry is developing for mining properties. Prices asked for prospects and mines have about reached rock bottom and as spring draws near there is reason to believe that much new capital will find its way into western mining districts. Already plans are being perfected to rehabilitate numerous former producers forced into idleness through the scarcity of labor and the high cost of supplies. Silver mining districts are already feeling the wave of optimism that is gathering momentum daily. New ore bodies recently developed in Aspen, Colorado's famous silver district, made famous by the bonanza deposits of the white metal, have awakened new interest and when spring is with us again we may expect to see a general revival in the wonderful old camps of which Leadville is the center. It has been an open winter in Colorado to date and heavy snows are to be expected during the next couple of months. These snows insure a plentiful water supply for mining and placering.

"Western mines will be called upon to produce increasing tonnages of copper, zinc and lead to meet the requirements of manufacturers and builders. The gold and silver miners will give the world the necessary hard money to carry on the increased commerce, manufacturing and building and allow the nation to return to the good old days when gold was a part of our monetary system. The Colorado Metal Mining Association and the Colorado Chapter of the AMERICAN MINING CONGRESS in session here took action to assist the mining industry of Colorado to get back upon its feet. Every western state should do likewise, and our representatives in Congress should be made to know that their work includes a serious consideration of the needs of the mining industry."

SOME WHOLESOME ADVICE is given both to coal mine workmen and coal mine operators by the *Coal Mining Review*, which points out the dangers to be feared from selfishness. We read:

"The year just ended has made history for the coal mining industry. It has presented many new object lessons to the operators and miners. If those object lessons are permitted to be ignored by either the miners or operators or both, it will mean they who fail to learn while they live will pay the penalty of their folly. Study your difficulties the past year in order that you may in the future solve the problems of the coal industry intelligently and promptly. If miners and operators do not realize their individual and collective responsibility, they will be compelled to suffer from outside interference.

"Operators and miners on the threshold of the New Year should look calmly into the future, confident of the stability of our country and its institutions. Our country, with unlimited natural resources, will participate in the tremendous work of reconstruction which is inevitable in every field of human effort. The year just beginning is not now as bright for the coal mining industry as might be desired, but it is certain the industrial activities will soon take on new life and promptly reflect itself in greater activity in the coal mining industry.

"Miners, beware of the agitator who has no interest in your welfare except to deceive and mislead you to help promote his power for selfish interest. Operators, guard against that group of coal buyers who are continually trying to demoralize the coal mining industry to purchase cheap coal regardless of the effect on the miners, operators or the public. There is a prosperous future for the coal mining industry, but you can destroy that bright future, if you attempt to ignore the rights of the people, in an effort to promote and defend your own rights."

CANADIAN MINING ENJOYS PROFITABLE YEAR.

EXCEPT FOR THE WAR YEAR 1918, Canadian mining production in 1920 was the largest, in point of value, in the country's history Tabulations by the Canadian Bureau of Information, New York, show that the total value of Canadian mineral production for the year was \$200,000,000 as compared with \$176,686,000 in 1919. The 1918 production was valued at \$211,301,897. The year was featured by a marked recovery in the production of copper, zinc and nickel, also of coal, and there was also a small increase in the gold production. Production of zinc, coal and asbestos was the highest on record, while that of chromite, gypsum, flourspar, mica and salt was well sustained. Production figures for the year follow:

Total	\$200,000,000
Pig iron (short tons)	1,080,000
Steel ingots and castings (short tons)	1,220,000
Copper (lbs.)	82,500,000
Zinc (lbs.)	42,000,000
Gold	16,000,000
Silver (ounces)	13,500,000
Lead (lbs.)	35,500,000
Coal (short tons)	16,000,000
Nickel (lbs)	61,500,000

TEXAS POTASH TO BE DEVELOPED.—Briny lakes of the South Plains region of Texas contain potash in great abundance, according to an article appearing in the *Journal of Industrial and Engineering Chemistry*. The water and earth of the lakes have recently been tested. One basin which covers nearly 6,000 acres has a potash content of 12 per cent. Practically all the briny lakes of the district have been under lease for potash development for more than a year, but nothing has been done toward development, largely through fear of large importations of German potash which might make operation of domestic deposits unprofitable. A new separation process is in operation in two plants at Antioch, Neb., which is said to give potash of higher purity and also to reduce the cost of operation. Tentative plans call for piping the potash laden water to railroad points where large plants are to be built for the separation of the potash.

WORLD'S DEBTS AND PAPER MONEY STILL INCREASING

BANKS ARE CONCERNED at the decrease in gold production, and the diminution of the ratio of the gold reserve to notes in circulation. The National City Bank, New York, publishes the following figures and appropriate comment by its statistician, O. P. Austin:

"The second anniversary of the armistice finds the world's national debts and paper currency still rapidly expanding. It was hoped, expected, in fact, that the great expansion of national debts and paper currency which characterized the war period would terminate with its close, or, at least, during the year immediately following its cessation. But it now appears that the increases in both debts and paper currency have been as great in the second year after the armistice as in the year which immediately followed it. World national debts, which had grown from \$43,000,000,000 at the beginning of the war to \$212,000,000,000 at its close on November 11, 1918, advanced to about \$256,000,000,000 at the end of the first year of peace, and are now, at the end of the second year, approximately \$300,000,000,000, and the annual interest charges have advanced from \$1,750,000,000 in 1913 to \$12,000,000,000 in 1920. World paper currency shows a similar gain both during and since the war, having advanced from \$7,500,000,000 at the beginning of the war to \$43,000,000,000 at its close, \$55,000,000,000 one year after its termination, and approximately \$80,000,000,000 at the end of the second year. National debts, which increased \$170,000,000,000 during the war, added \$45,000,000,000 in the first year of peace and another \$40,000,000,000 in the second year just ending. World paper currency, which increased \$36,000,000,000 during the war, shows a further gain of about \$12,000,000,000 the first peace year and over \$25,000,000,000 in the second year, just ended.

"With the enormous increase in paper currency and the marked fall off in gold production the ratio of gold to notes has fallen from 66 per cent to less than 10 per cent. World paper currency is now eleven times as much as at the beginning of the war, and with gold production running at only three-fourths as much as at the beginning of the war and the world demanding increased quantities of the yellow metal for the arts and industries, the available supply as a backing or "reserve" bears a constantly diminishing ratio to the note circulation. An aggregation of the figures of gold and paper existing in the 50 principal countries for which figures are available shows that the ratio of gold to notes stood in the grand total at 66.8 per cent in 1914, 17.9 per cent in 1918, 13.7 per cent in 1919, and 9.3 per cent in 1920. In many countries the ratio of gold to notes is far below the general average above noted. In the case of Germany, the ratio of gold to notes is about six-tenths of 1 per cent; the notes of the Austro-Hungarian Bank, four-tenths of 1 per cent; and those of the Bank of Poland much lower.

COPPER.

RAIL RATES have halted copper shipping and winter deliveries will probably be made from stocks stored in the east, according to the *Gazette* of Iron Mountain, Michigan, which says:

"Deliveries of such copper as might be sold during the winter months will probably be made entirely from the stocks now sorted in the east, in the opinion of mine managers, says a Calumet correspondent. High freight rates, by the rail routes, coupled with the lower selling prices for the metal preclude shipment of copper east by rail this winter, although for three or four years past it has been customary to fill large and small orders by rail.

"Practically all of the operating companies of the Lake Superior camps have large stocks of copper stored in the east, probably more than sufficient to care for all orders for the metal that will come in during the winter and until Great Lakes navigation resumes in the spring.

"Shipments of copper east by the water route last summer and fall exceeded somewhat the production of metal during the season of navigation, the early boats cleaning up practically all of the stocks held over from last winter. Total shipments from points in the camp were 69,624,000 pounds compared with 55,622,000 pounds the previous year. During November, alone, 16,468,000 pounds of copper were shipped east by boat. A very few rail shipments were made during the summer and they were of special grades of copper to fill special rush orders.

"Thirteen and a half cents a pound for copper means that the metal has been going at from 2 1–2 cents to 3 1–2 cents below the cost of manufacture, but even at that price the call for copper does not reach the figure of the curtailed production, it is stated. A number of consumers appeared when first reports were given out that copper was to be held at 13 1–2 cents, but the supply at this figure dropped off. Now that more can be had at 13 1–2 to 14 cents the buyers are few in number, evidently the expectation being that the commodity will go even lower. The larger companies, those that are best prepared to weather present conditions, are not offering their metal at below 15 cents, however. It is estimated that there is a surplus of 600,000,000 pounds of metal in this country alone.

"Copper mining people do not anticipate that there will be any further reduction of production, either here or in any of the western camps. In fact, most of the properties have curtailed to as low a point as possible and still hold their men. The crews of miners must be held now if they are to be had when industry in general "comes back," one mine manager declares, or the copper companies will find themselves in the position they occupied immediately after the opening of the war. Then, not anticipating the enormous demand for metal that developed among munitions manufacturers, they laid off thousands of men who immediately sought and found work in larger centers, and when the mills needed men they could not be had."

COPPER FLUCTUATIONS during 1920 are reviewed by the *American Metal Market and Daily Iron and Steel Report* as follows:

"The metal decline in prices of refined copper in 1920 ranged from $5\frac{1}{2}$ to $6\frac{1}{2}$c a pound. During the first three quarters of the year fluctuations were relatively narrow but the downward tendency was more pronounced as the year advanced. In the third quarter, the net decline ranged from $\frac{3}{4}$ to $1\frac{1}{4}$c a pound, whereas during the first quarter the net decline was only $\frac{1}{8}$ to $\frac{1}{4}$c and in the second quarter it ranged from $\frac{3}{4}$ to $\frac{7}{8}$c a pound. In October, however, the market broke sharply and during the following two months the decline was accelerated, ranging from 4.75c to 5c a pound. During the entire year, Lake fell $5\frac{1}{2}$c, electrolytic dropped $6\frac{1}{2}$c and casting decline 6c per pound for prompt and nearby shipment in the outside market. Producers' prices broke 6c a pound but the decline meant more to producers because they absorbed the advanced freight rates, not only to consumers but also on copper shipped from western smelters to eastern refineries which caused an advance of $\frac{1}{2}$c or more a pound in cost of production."

THE PREPARATION OF COAL FOR EXPORT

THIS IS THE TITLE of an interesting article by Carl Scholz contained in the *West Virginia Mining News*. Mr. Scholz goes into details in discussing the preparation of coal for export in the Westfalia Districts of Germany, which he visited some years ago. His most notable observations were that coal from German mines was handled and sold by the Westfalia Syndicate, which controlled the output of 85,000,000 tons, under a single selling organization, whereas in England many companies acted independently and in strong competition with each other. The advantages of the German syndicate, which was always able to supply various grades of coal adapted to particular uses, were great, and were made greater by the circumstance that England at that time was suffering from strikes and other interruptions to operations.

In America also, as Mr. Scholz points out, coal mining operations are owned and directed by large numbers of people, few of whom are familiar with the requirements of foreign customers. The pooling idea developed on the Great Lakes, under which every shipper takes the place of a stockholder in a mutual company, is considered by the writer the most satisfactory solution of the problem presented by small ownership.

The German syndicate kept in constant touch with its customer-consumers with the view of learning which coal gave the best results, and what were the appliances to be used to reduce the fuel cost to the consumer to the minimum. The whole question is of especial interest to America now because of the high cost to the European consumer of American coal. Mr. Scholz deals with size, equipment used at the tipple, with the tipple itself, with certain other mine equipment and with transportation, and concludes with the following discussion of the personnel element and plea for closer co-operation of operators.

"The preparation of coal does not depend wholly upon the equipment provided; it rests more largely with the men engaged in the work, and while the tendency for mechanical appliances for mining and loading in the mine is increasing, the success in obtaining clean and best prepared coal depends largely upon the personnel of the mine. As is usually the case, during the period of a rush when coal is in demand and labor is scarce, mine management becomes very lax in enforcing rigid discipline which should prevail before more or less laxity results in the production of improper coal which, under normal conditions reacts to the disadvantage of both the operator and his miners. Miners can change their place of employment, but operators cannot change their mines. Therefore one of the principal duties of the manager of a mining property is to constantly strive for the best preparation at all times. If quality is given preference over quantity, in the long run this policy will pay the best dividends. This, however, does not preclude the natural trend for larger production, in fact, it requires it, because the expensive machinery required for good preparation costs more money than the ordinary coal tipple. Consequently large production and good preparation are closely allied.

"It is firmly believed that it will be to the interest of the operators in the West Virginia, Virginia and Kentucky fields to get closer together on the subject of utilization of the coals which they export to ascertain, by investigation on the other side, just what steps can be taken at this end to deliver the most value to the consumer on the other end; to teach him how to burn our coal and what appliances we have found to give the best results on this side."

NORTHWEST FEELS NEED OF PROTECTIVE TARIFF

MAGNESITE PRODUCERS are shutting down, and will stay shut down until the industry is protected by a tariff, according to information sent out by the *Spokane News Bureau*. Workmen have been laid off and other evidences of the need of protection are afforded. As the bureau's bulletin says:

"Between four and five hundred men have been laid off by the three big magnesite companies at Valley, Stevens county, fifty miles north of Spokane—the Northwest Magnesite company, the American Mineral Production company and the American Refractories company. Unfortunately this constitutes a real shutdown and not merely a curtailment as, with the exception of the American Mineral Production company, no production whatever is going on, the few men still left being employed simply in repairs. The exception noted is the one feature of the situation, the running of a small pioneer kiln, in which it produces some 100 to 150 tons a month of calcined magnesite for the eastern flooring and stucco trade. A large kiln is practically completed, with a capacity of 1,000 tons a month. As Washington magnesite has never before been used for this purpose, the company is entering upon this branch of the business cautiously, by operating only the small replica of its large kiln until such time as its brand of calcines has been tested through trial carload shipments, by large eastern consumers. Austria is now so nearly supplying the entire demand from that quarter that the remaining orders accruing to the large plants are negligible and the shut-down will undoubtedly last till a protective tariff is secured."

PUBLICITY

THE VALUE OF ADVERTISING has been frequently commented upon in this department. The following, taken from the *Mining Journal* of Phoenix, Arizona, contains some very interesting comments upon the subject in relation to a very interesting law:

"The value of advertising has never been more effectively illustrated than in its relation to blue-sky laws. Among the first of the effective blue-sky laws was that known as the Pardee law, so named after the then Governer Pardee of California, who was chairman of the AMERICAN MINING CONGRESS committee which recommended the enactment by the various state legislatures of a law which made misrepresentation of any material fact relating to the value of mining stocks offered for sale a misdemeanor punishable by fine and imprisonment. The consummation of the fraud was not essential to the effective operation of this law; the only thing required was evidence that a mispresentation had been made, and it was not required, as under the laws against false pretense, that someone should be swindled before the penalties were incurred. This law was enacted by a number of states, but was not properly advertised, and therefore did not attract popular attention."

The

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FREIGHT RATES AND WAGES

SEVERAL MONTHS AGO the MINING CONGRESS JOURNAL predicted that the earnings of the railroads during the last six months of 1920 would be less than the first six months, notwithstanding the increased transportation rates. Unfortunately, this prediction has been more than justified, partly for the reason upon which it was based, and partly because of a slackening up in business activity. To what extent the increased freight rates influenced the business depression, cannot be determined. Certain it is that all business depends very largely upon transportation. Nothing has any value until it has been removed from the point of origination. Most articles need to be changed in form as well as to be removed from place to place. If wages are so high and other manufacturing expenses so great as to make the product too expensive for general use, or if the cost of transportation is made so high as to put the finished articles beyond the reach of the mass consumer, production in that line must necessarily slacken. The last increase in freight rates made the total approximately two hundred and three percent of the normal prewar freight rate. Freight rates of the future, and wages of the future, must be based upon the buying power of the nation to consume the articles made available by these joint agencies. Capital may remain out of use but workers must be employed and railroads must be operated else the one starves and the other decays.

Assuming that the freight rates of pre-war days were comparatively low and that a slight advance might have been then justified, even this assumption does not justify the enormously high freight and passenger rates which the public must now pay for this class of service. Railroad business must necessarily fall off except under conditions which will keep the price level up to the two hundred percent point. Just now the railroad executives are proposing that the Railroad Labor Board shall reduce the scale of wages paid to the workmen. The public will approve this reduction only with the understanding that its transportation service is to be lowered in cost. If railroad rates are to be kept up to the present levels, then the public will approve the present standard of wages. *Railroad executives may as well understand now as later, that the public will not approve an assault upon the wage scale except with a satisfactory understanding that transportation rates will be reduced in similiar proportion.*

Gentlemen who have appeared before the Ways and Means Committee asking for protection upon shoes, but free hides and leather, those who want no protection upon wool but do want woolen clothes heavily protected have had the fallacy of their position made most apparent. The public mind approves the stand of the Ways and Means Committee as to tariff duties, and stands for the same principle as to railroad wages. If wages are to go down as they should, then all other living costs must go down proportionately, and among these a very important expense is that which is paid for railroad service.

A LESSON FROM RUSSIA

EVEN AS EVERY GOOD government invariably makes mistakes, so does the worst of governments sometimes do something right. In the most impractical of administrative systems common sense is occasionally evident. Evidence of such a situation, where "capitalistic" business judgment has prevailed over communistic theorizing, has recently come from Russia.

It appears from documents secured with great difficulty by the International Labor Office that the Soviet authorities created a commission to fix the hours of labor and rates of pay for the proletariat. From the rules and regulations applying to metal workers, made by this commission in cooperation with the labor union involved and approved by the Commissariat of Labor, the following paragraph is taken:

"It is enunciated as a principle that since the worker has a guarantee of salary, he in his turn must guarantee a fixed quantity of labor. If under normal technical conditions he fails to reach normal production he is only entitled to two-thirds of his wages."

The doctrine of a full day's work for a full day's pay, is good, sound, common sense, even if it does come from Russia, and now when increased production and an honest day's work for an honest day's wage is a pre-requisite to the maintenance of proper living standards, careful and thoughtful consideration of its import is recommended to American workingmen.

WORLD PEACE WOULD HELP COPPER

WORLD PEACE and re-establishment of foreign credits will bring prosperity to the copper industry, in the opinion of the Secretary of Labor. In a formal document, the Secretary recently pointed out that to appreciate the industry's dependence upon foreign trade it is only necessary to recall that before the war from forty to fifty percent of American production was exported.

"Restoration of the industry to normal conditions, therefore, depends upon a combination of peace-credits and transportation," the Secretary said. "Given these and the markets will be found, and once more this great industry will catch up with the onward industrial march in prosperity, in which the employers will share with their employes in a great measure the 'ways and means' that make for neighborliness and continued industrial peace."

RESULTS OF ORGANIZATION

DURING THE YEAR 1918, mining and quarrying corporations, in computing taxable net income, were allowed deductions of $333,236,911 for exhaustion, amortization and depletion. Until the American Mining Congress convinced the Congress of the United States that mining problems were different from those of any other industry, no allowance was made for exhaustion and depletion. The amount of taxes saved in one year would not only support the Mining Congress for several centuries, but if invested would return an income which would enable it to function throughout all time. Moral-Support of the American Mining Congress is an investment which draws down dividends.

FUTURE FEDERAL TAXATION

THE THIRD AND LAST SESSION of the Sixty-sixth Congress comes to a close and the much discussed reformation of the Federal war tax laws has not been accomplished. The tremendous revenue program initiated in 1917 is still the most conspicuous and important, albeit most unpopular, part of our fiscal system. But whatever the political, practical or other considerations that deterred the retiring Congress from acting in its three sessions, it is safe to assume that the legislative wheels will begin to turn soon after the convening of the special session of the new Congress. The government itself is very much concerned as to the future yield of the existing system, based as it is largely on the extraordinary industrial profits of war time.

The first task of the Congressional committees is to determine approximately how much revenue must be raised. From the size of the appropriation bills and the rather dismal forecasts of Treasury officials, it looks like a problem of how much, and not how little. To ascertain the exact amount required is quite a task in itself, but by no means the most important. Under our democratic form of government, lawmakers at least attempt to ascertain the public state of mind, and to learn what the tax-paying public is willing to endure as to method of taxation. It is a wholesome aim, but just about an impossible accomplishment. The public, as a whole, does not know exactly what it wants. The reason is not difficult to find.

All of the standard adjectives, and not a few new ones, have been employed by public speakers here and there in the last two years in denouncing the complexities of the entire war revenue system, with the excess profits tax the most popular target. And while the excess profits tax has perhaps been a little overloaded with blame for our economic ills, it is unquestionably guilty of sufficient crimes to merit its probable fate of simple extinction. But the complications, vexations and complementary influences of the excess profits tax are merely subsidiary evils. If we be honest, the chief complaint is that against excessive and over-progressive taxation. He who complains most is usually he who is hurt most, and he who feels he is hurt most is usually he who pays more than his share as compared with his neighbor. The demands of our Federal treasury are imperious and voracious. If we can expect no material reduction in the government's requirements, what can we expect of tax revision? A more equitable distribution. That implies reducing the burden of A, but increasing the assessment upon B. The A class may then feel a little better, but what of B? A may have paid too much and B too little, but B won't acknowledge it. The A class, as part of the public, knows what it wants, but B and A combined, the public as a whole, have no common want. Those public-spirited business men who a year ago began the creditable effort to unite the business thought of the country, that a single comprehensive program might be laid before Congress, have had their hopes rudely shattered. It is small wonder that congressmen are bewildered by the cross-fire of scores of different agencies which have failed to compromise and which will probably find Congress compromising for them, as predicted in these columns some months ago.

It is no sense of hypercriticism that occasions this view of the situation. Ventures involving unusual hazard, with perhaps the reward of risk and patience realized in a brief space of time, scarcely warrant the same rate of excess taxation as the safer and more permanent enterprise. Earned income at least idealistically merits more moderate levies than unearned increment. And so on. But whatever the pure equities, the element of human nature cannot be ignored. We have not yet reached that Utopian state where concurrence of thought is to be had in the leveling process of abstracting from one for the benefit of another.

The call for a more equitable spread of the tax burden is urgent and essential, but the true problem of our Federal taxation will not find its answer in mere adjustment. Successful tax revision can involve but one main operation, that of downward revision. We can twist and turn, applying the screws a little harder here and a little lighter there, but after all it is merely temporizing. The worst woe would be a complete revolution of methods, forsaking principles and clutching at panaceas and dubious experiments. The real solution is lower taxes, not "squarer" taxes.

In these days of familiar references to "best minds" and "master minds" attention should be called to the niche in history that awaits him who can reduce the volume of the nation's great burden.

GOLD IS THE CRUX

IN PARIS on January 28, Edwin L. James of the *Chicago Tribune*, at a dinner held at the conclusion of one of the Reparation Conferences, asked Premier Lloyd George, "What is the hardest problem of the reparations situation?"

"It is this" he replied, "all allied nations are agreed that Germany must pay indemnity by exports. All allied nations also are agreed they do not want German exports.

"France thinks England should take German exports and enable Germany to pay reparations with what we would owe. We think France stands much more in need of German exports than we do, and your own Mr. Harding said he was determined on one thing—that Europe should not pay her debts to American by sending goods.

"Every nation wants to protect its own industries—every nation wants to collect its debts. Germany has not gold enough to pay the allies. The allies have not gold enough to pay the Americans, and everybody wants to be paid in gold.

"To find an answer to this situation is not only the hardest reparation problem; it is the hardest problem of the whole world today."

That gold is the crux of the economic readjustment of the world is the pronouncement of this statesman, who is noted for his hard-headed business judgment and common sense. The readjustment of the world's business is now being delayed on account of limited national gold reserves. A mere shifting of the gold stock of the world from one country to another will not in itself increase the monetary stock, which has actually declined approximately $400,000,000 since 1915. Inasmuch as these gold reserves have been built up from the production of the mines, it would seem now quite natural that nations should look to sources of new production wherewith to rehabilitate their reserves.

Some of our theoretical economists state that the production of the world is so small a percentage of the monetary gold reserve that at best it could have little effect. In 1910 the world's production of new gold amounted to 7 per cent of the total monetary gold stock of the world; in 1920 the production ratio of the gold is estimated at 4.4 percent. In 1910 the gold production of the United States amounted to 5.7 percent of the total gold stock of the nation; in 1920 the ratio of production to the gold stock was but 1.8 percent.

Since 1910 there has been a marked increase in the amount of gold diverted from monetary use and consumed in the manufacture of jewelry. This has to a large extent lessened the amount of new gold available for monetary purposes and has contributed greatly to the shortage of gold which now confronts the world as one of its most important problems. Had the gold production of the world increased during this period, or even maintained its normal rate, the effect of this industrial drain would not have been so seriously felt.

The economists state that because of the increased banking facilities, a smaller amount of gold has been able to do a greater amount of work during this period of inflation. It is therefore a direct deduction that the same amount of gold as would have come to the monetary gold stock of the world through normal production would have now even a more beneficial influence than heretofore in the financial structure of the world system. An examination of the facts proves this to be true. The ratio of the monetary stock of the world to the paper money circulation in July, 1914, was 66.3 percent; in 1920, was 9.2 percent. In other words a gold dollar in 1914 was required to support but 1.5 dollars in paper currency, while in 1920 this burden upon each gold dollar had grown to more than ten dollars in terms of the world's note circulation. In terms of the credit as well as the currency which are superimposed upon the monetary gold stock, this figure would be greatly multiplied. In our own system a dollar in gold now supports between twenty and thirty dollars in expanded credit and currency. There are two means for reducing inflation: the first, to increase the gold held against the note circulation; and second, by reducing the volume of the note circulation.

The argument that the addition of gold to the reserve would have a tendency to create inflation is based upon the assumption that it would be used to increase the note circulation, while it is wholly under the power of our financial authorities in the government to build up the reserve and to reduce the note circulation, thereby accomplishing a greater deflation than could possibly take place without injury to our industry by the process of reducing the note circulation alone.

The gold producing power of the United States is seriously threatened by the loss of ore reserves incidental to the closing down of the mines. Even though this were not a sufficient consideration the invigorating effect of a larger production of new gold for monetary use will maintain confidence in our currency and financial system and will greatly accelerate a safe return to normal business conditions. In the interests of the public welfare, therefore, the government should adopt a temporary expedient to tide the gold mining industry over this period of economic stress.

THE UNEMPLOYED of Newport News have been given the choice of going to work, leaving town or going to jail. Wonder which of the latter two they will choose?

STATE REGULATION OF COAL IN INDIANA

COAL PRODUCTION in Indiana is one of the primary factors in the industrial wealth of the state. The average annual production of coal, roughly figured, is approximately 22 million tons, and the annual return for the sale of this coal amounts to between seventy and eighty millions of dollars. The bulk of this return goes to labor and is therefore widely scattered throughout the population of the state.

It has long been recognized that coal mining is a hazardous and difficult business enterprise requiring an unusual amount of business acumen and energy on the part of the producer in order to secure a profit over any period of years.

In view of these facts it might be expected that the state government and the general business public would do everything in their power to cooperate with and assist the permanent coal operators in building up and stabilizing the industry. Unfortunately, in spite of the essential character of the coal industry, the general public has shown little interest in coal production except when an emergency arises creating a sharp increase in the demand and an ensuing scarcity of coal on the market. When such an emergency arises, due invariably to causes quite beyond the control of the coal operators, the public becomes frightened and an excuse is furnished for professional politicians or well meaning, but misguided, organizations to urge the creation of governmental agencies for regulating the coal industry.

As a result of the peculiar emergency in 1920, the State of Indiana, through its Legislature, passed a bill in July, 1920, creating a Food and Fuel Commission with powers to fix prices and to control distribution. This commission, as usual, concentrated its efforts on the coal industry, started an investigation, and after voluminous testimony fixed prices for coal.

Results of the work of this commission were, first, it created a great deal of disturbance in the industry; second, naturally many Indiana operators found it advantageous to sell their coal in other states and consequently a considerable number of large coal retailers in Indiana stocked up with coal purchased at higher prices than would have normally been paid for Indiana coal, from Illinois and other adjoining fields. Finally, coal operators took the matter into court and the courts enjoined the Commission from executing its arbitrary powers.

In 1920 and in the early months of 1921, the coal situation passed very rapidly from a period of extreme scarcity to a period of surplus coal. As a result largely of the interference of the state government, many coal dealers found themselves with supplies of coal purchased at high prices from adjoining states, and there is some reason to believe that the general public in Indiana is paying higher prices for coal than would otherwise have been the case.

The experiments of the State government in Indiana in attempting to regulate the coal industry are additional evidence of the well known fact that it does not pay from any standpoint to monkey with the buzz saw of industrial and economic production and distribution through the creation of temporary semi-political machinery which, if it is to achieve any beneficial results, must make an exhaustive study of conditions and analyze the information which the permanent operators in the coal industry have learned as the result of many years of painstaking, careful and sometimes bitter experience.

ENGINEERS IN POLITICS

MEMBERS of the Chicago Chapter of the American Association of Engineers have gone into politics and their Political Action Committee has published an appeal to all members of the craft to follow suit. If their object is what it appear to be, namely, to improve government by inducing business men to take an active hand in all elections everywhere, their activity is worthy of emulation.

Too long have the majority of reputable business men stood aloof from pre-election activities only to stand aghast at election results. While "prominent citizens" eschew polities, they may expect to be eschewed by politicians. Unless they stand their ground before election, they will have to stand for being ground after election.

Through the columns of the *Professional Engineer*, the Chicago Chapter offers to members of the A. A. E. the following advice:

> "Engineers are urged to make the acquaintance of the local official of their party and offer themselves as recruits in ward politics. . . Get in on the ground floor of politics. Work up in the organization of your party—don't stand aloof and then criticize when results are unsatisfactory. Lead the other engineers in your precinct to exert a wholesome influence in politics."

And lest some engineer still persist in believing that his influence as a citizen, exerted after election, is all that is needed, the Political Action Committee adds the following:

> "There is no royal road to political purity. Reform means work. It means that engineers should join some organization. They should canvass for votes, be willing to serve as judge or clerk of election, precinct captain or watcher, contribute to the campaign fund, respect the princinct worker and not consider him a sucker, avoid loose talk of graft, vote for what is right rather than try to pick the winning ticket, be influenced by argument rather than persuasion, get acquainted with the neighbors. Not only do these but get others to do them."

If the word "engineers" be eliminated from the above paragraphs and "all business men" inserted, the advice will be even better than it is, although it is mighty good advice as it stands. The one thing the government of the United States and of most states, cities and counties needs more than anything or all things else is better business methods. And the only way business methods can be injected into government is for business men to inject themselves into politics.

Mercantile concerns have regard primarily for their creditors, their customers and their prospective customers. Hope of continued profits dictates such a course. Exactly the same course is followed by men who make and administer the laws. To them office holding is a business, and as business men they have regard primarily for those persons and those interests who placed them in office and upon whom they rely to keep them in office. This is the natural, the normal thing for them to do; seldom indeed is an office holder so unselfish, so patriotic that he does anything else.

Neither engineers nor miners nor other business men can secure desired political results without working actively, personally and at every election for them. When the prohibitionists went into ward politics and pledged every candidate, high and low, to their cause the country went dry without further delay. When the railroad brotherhoods went into politics they forced the entire national administration to capitulate. And when business men generally come to recognize that government is the biggest business in the world and that they are the heaviest stockholders, and when they give this business the personal thought and attention they always bestow upon their minor interests, the country will have progressed a long way toward that desirable condition when we shall have "less government in business and more business in government."

WORLD'S MONETARY GOLD SURPLUS

SAMUEL MONTAGU & CO. of London, in their statement of February 3 quote the authority, Mr. Joseph Kitchin, as follows: "'The 1919 world's gold production was £75,200,000; of this, industry took £22,000,000; India £27,700,000 (year to March 31st, 1920) and China £13,500,000, leaving only £12,000,000 for addition to the stock of money to the rest of the world. Industry probably took £22,000,000 of the £70,000,000 produced in 1920. The absorption of India and China will probably be found to leave a figure almost as small in 1920 as in the preceding year for the world's stock of money. The addition used to be £50,000,000 or more per annum.'"

On account of the diversion for the last two years of the newly produced gold into industry and the Oriental countries, the amount of newly produced gold available for monetary purposes has been reduced from about $250,000,000 or more per annum to less than $60,000,000 during 1919 and 1920. It is regrettable that so much gold is thus diverted from monetary use at a time when the world's demand for monetary gold is so great. This diversion explains to a large extent the continued depreciation of European exchange, which has operated to so seriously impair the purchase power of Europe in our markets. A continued decline in the production of new gold, coupled with so extensive a diversion as has taken place during the last two years, will postpone the financial recovery of Europe and still further limit our export trade.

The Director of the Mint reports that $75,500,000 of gold was consumed in the industrial arts in 1919, which is three-fourths of the amount presented by Mr. Kitchin for the world's industrial consumption. The production of new gold in the United States declined from $101,000,000 in 1915 to $49,500,000 in 1920. It is time that the United States, as one of the principal gold producing countries of the world, and as a creditor nation, should check the amount of gold diverted for industrial use and provide means to prevent a still further decline in its production of new gold.

The gold producing power of the nation is now seriously threatened, and the loss of large gold ore reserves through continued shutting down of the mines is imminent, unless immediate relief is provided. To maintain the gold producing power of the United States will be to safeguard the gold standard.

LAST YEAR AND THIS

NEITHER BOUNDLESS optimism nor bottomless pessimism is in order now, but if a choice between the two must be made the former would be preferable and more nearly justified. Although the mining industry has suffered from many causes and still labors under handicaps present and prospective, the recent past has been far from unprofitable and the immediate future appears not altogether uninviting.

The year 1920 brought riches untold to oil operators and 1921 gives every promise of sustained or increased production, heavy demand and satisfactory prices. Iron ore movements were greater in volume and value in 1920 than during the year preceding, and the national rail shortage and the housing problem give every reasonable indication of a great and profitable market for steel for many years to come. Coal production during the twelve-month period last past approached the record mark of all time and price recessions have yet a considerable distance to go before they will become discouraging.

In the West, where mining in general has suffered most, several states rounded out the old year with increased production. Hope for relief for gold mining is not without justification. At this writing, mineral producers of the South are joining the forces of the West in the campaign for tariff protection, and it is not unreasonable to believe the new administration will hearken to the voice of the whole country in this matter. Railroads have given notice of an intention to shake off the expensive shackles fastened by war enactments, and when they have thus reduced operating expenses, even if not before, they must in the very nature of things reduce the rates which amount in many instances to more per ton than the cost of producing ore.

Sanity has returned to the world. Workingmen have begun accepting wage reductions with good grace, the backbone of the consumers' strike is broken, Congressmen and Senators are becoming convinced that oppressive taxation defeats its own ends. The danger of a financial panic has passed, prospects loom bright for unexampled business before the expiration of the current year.

It is not a time for inactivity. No "easy pickings" are in sight. Some branches of the mining industry have yet a very, very hard road to travel, and others have a deal of work to do before the going can be made easier. But miners are fighters. They may be knocked down, but they never lay down. To such men and to such an industry the outlook, taken by and large, is reassuring.

WHEN DOCTORS DISAGREE

THE STATEMENTS of an eminent economist submitted at the Congressional hearing against the passage of the McFadden Bill do not hang together. Professor E. W. Kemmerer of Princeton is unfortunate to the extent of being unable to agree even with himself.

At one point in the hearing Professor Kemmerer stated that the increased volume of gold production which the McFadden Bill might stimulate would amount to such a small percentage of the world's total supply that it would have practically no effect from the monetary standpoint. But at another point he asserted that the payment of a premium would so stimulate production that it would make gold cheaper and prices higher, and that this process would continue and repeat and multiply itself over and over again indefinitely. In fact, the Professor admitted that the more he contemplated the terrible effects of the payment of a premium to gold producers the more nonplussed he became, and he could only say that "You have what seems to me to be a vicious circle. I do not see where it is going to end."

The Professor's statements cannot be reconciled. The conflict between them is flagrant and fatal to his case. The effect of such self-contradiction in the testimony of an eminent economist will not be lost upon the logical, coolly-calculating minds of the members of the Ways and Means subcommittee.

THE GOMPERS REBELLION

INSURRECTION, without qualification, is what the threatened conduct of Samuel Gompers and the other two-hundred union leaders amounts to. "A flat refusal on the part of labor to recognize or abide by the terms of injunctions" means just this, nothing more and nothing less.

Democracy comes to full fruition in the courtroom. It is most perfectly exemplified in the respect and obedience accorded to court decrees. Our's is a constitutional government. Mr. Gompers and his colleagues have all the rights guaranteed by the constitution to all other citizens, but no more. One of these rights is the privilege of appealing to the courts, and another is the privilege of having the court's award enforced upon an unsuccessful adversary. Refusal to submit to the arbitrament of the courts is anarchy and organized resistance to their authority is rebellion. History affords more than one instance of the ability of the United States government to deal with insurrection.

But it is seriously to be doubted if Mr. Gompers and his two hundred other potential insurrectionists actually represent organized labor in this matter. After all, they may be only misrepresentatives. In a more pronounced emergency a few years ago the Administration capitulated to the demands of certain organized labor leaders and enacted the Adamson Law, but at the last election a very considerable proportion of those who benefited directly from this measure voted against the Administration which put it into effect. There have been observed other indications that organized labor has seen the futility of class antagonism, and certain it is that a majority of voters, which always includes many members of labor unions, is done with class rule. So in asserting that "this is the only immediate course through which labor can find relief and this course it purposes to pursue," Mr. Gompers is taking in a whole lot of territory, and, perhaps, too much.

At this writing, forty-eight hours after the issuance of the Gompers pronunciamento, there appears little occasion for alarm. But should the situation change, Mr. Gompers and his two-hundred friends will do the worrying.

COAL AND THE CALDER BILL

ANY business, under competitive conditions, with a productive capacity in excess of possible consumption needs no governmental control to insure low prices. If a line of business also requires continuous operation at highest capacity in order to meet competitive conditions, there is created a condition which instead of requiring government restriction actually requires government sympathy and aid in order to prevent the demoralization of the business by cut-throat competition.

When the war broke out, the bituminous coal industry as a whole was on the verge of bankruptcy. A few large companies with vision were increasing their bonded indebtedness, buying up the holdings of their bankrupt neighbors, and gradually, the process leading to a great trust in coal was in operation.

The Sherman Law, backed by the power of a great government, threatened every combination, either reasonable or unreasonable, by which economies might be effected and the dangers of bankruptcy avoided. Coal company after coal company went into bankruptcy, the larger combinations perhaps increasing their production, but the net result being that notwithstanding the immense number of mines opened as new ventures, there was a less number of mines in operation in 1915 than in 1910, and those remaining in operation were struggling with each other to secure possession of the larger markets at prices which gave no profit to the operator except to keep in existence while other competitors whould go into bankruptcy in the hope that at some future time a profit might be obtained.

With the opening of the war came a demand so great as to require a maximum production of coal, that maximum being greater than it was possible for the railroads to transport. Cost of coal production at the mine was doubled and trebled, by increasing wages, by inefficient workmen, and by the fact that wages were so high that many miners who did not need to work but three days a week to support their families deserted their posts for the remainder of the time. Notwithstanding these adverse conditions the bituminous coal industry supplied the nation with its extraordinary needs during the war.

When the war was closed there was an over-supply of coal in practically every part of the country and production slackened because there was no future market in sight. When this surplus stock was partially exhausted coal strikes and railroad strikes, one after another, interfered with production while purchasers in various remote sections refused to buy coal when it was available and found themselves without it when coal could not be obtained. A run-away market was inevitable. Profiteering will reoccur under those conditions at every stage of future history, not only in coal but in every other commodity.

At the beginning of the war the bituminous coal industry was largely disorganized. Under governmental direction and under call of a government official, the coal operators of the country were brought together, by a request which amounted to a command, in a government building in Washington and practically required to organize to meet what was then considered a crisis. The individual coal operator *willy nilly* joined this movement, the National Coal Association was organized and began its work in close co-operation with the government. Its chief executive officer was soon called to the assistance of the Fuel Administration and rendered signal service to the United States Government throughout the war. This same organization, created at governmental command, following largely governmental direction, is now made the goat upon which is being fastened the sins of governmental interference in business affairs.

It has probably not occurred to those who are now fighting for governmental control of the coal business that this is but one of the various steps by which the constitutional liberties of the nation are being encroached upon. What has the coal industry done to justify this effort to restrict its operations and make greater the cost of coal production?

During its history the coal industry in the United States has furnished coal cheaper than it has been furnished in any other nation in the world. Upon the cheap power developed therefrom, more than upon any other factor, rests the wonderful industrial advancement of this nation. During the war period, nine-tenths of the coal production of this country was sold at a less price than fuel in like quantities was furnished anywhere else in the world. Governmental interference thought to be necessary as a war measure furnished the opportunity for a few scalpers and pirates to make an extortionate profit upon a small fraction of the total coal supply—and this is being made a pretext to justify congressional interference with the production of a vital necessity. It is furnishing a poor excuse for discrediting the leaders of a great industry.

The agitation can serve but two unworthy purposes—first, to gratify the muckrakers and, second, to furnish an excuse for another and further raid upon the constitutional liberties of the people.

PRESIDENT LORING URGES UNITED EFFORT BY OPERATORS

BENEFITS OF ORGANIZATION were pointed out by W. J. Loring, president of the American Mining Congress, in an interview given to the Sonoro correspondent of the Sacramento Union. Mr. Loring was quoted as emphazing the effects of the Division of Federal Taxation of the Mining Congress and as anticipating the accrual of decisive benefits from the McFadden Bill campaign.

"One of the greatest needs at the present time is the co-operative efforts of the entire gold mining industry," Mr. Loring is quoted as saying. "If all the mine operators would ally themselves with the American Mining Congress, these relief measures could be secured more easily. One feature of this organization that should appeal to all operators is the tax department."

PLANS FOR CORRELATING MINE STANDARDIZATION WORK

DEVELOPMENT of plans for standardizing mining equipment has progressed satisfactorily since a permanent organization of the General Correlating Committee was effected. Pursuant to the plan agreed upon in New York in January, the general standardization committees of the American Mining Congress are preparing drafts of their contemplated year's work for use of the Correlating Committee.

At the New York meeting, held at the offices of the American Engineering Standards Committee, 29 West Thirty-ninth Street, Colonel Warren R. Roberts, chairman of the Coal Division of the Standardization Committee, represented the American Mining Congress; Dr. O. P. Hood represented the United States Bureau of Mines; Howard N. Evanson represented the American Institute of Mining and Metallurgical Engineers; B. Britton Gottsberger represented the Mining and Metallurgical Society of America and F. P. Sinn represented the National Safety Council.

E. A. Holbrook of the Bureau of Mines was elected chairman, Colonel Warren R. Roberts vice-chairman, and P. G. Agnew, secretary, of the General Correlating Committee for Mining Standardization.

The committee is composed of two representatives of seven national societies and organizations which are interested in the standardization of mining equipment and methods. The object of the formation of the committee is to coordinate any work on standardization which any of these societies and organizations may be doing with the work which the American Mining Congress is now carrying out. In fact, this meeting was called because of the extensive work the American Mining Congress is doing, which has excited the interest of the industry generally.

The meeting was the third conference which this committee has held in the last few months and at this meeting a very definite program regarding the future work was outlined.

It was agreed that the plan now under way by the American Mining Congress for the publication of a separate standardization bulletin, carrying the report of the Standardization Division of the annual convention of the Mining Congress held in Denver last November, be sent to the entire industry and to all manufacturers interested in the work with a view to having the widest possible discussion of the reports and such constructive suggestions as any one may care to make.

When replies are received from the industry they will be sent to the chairmen of the sub-committees to whose work the suggestions may apply, for the consideration of those committees. After due consideration of the suggestions the sub-committees will make such revisions as meet general approval and these final revised reports will be submitted to the General Correlating Committee for final approval, after which they will be considered American standards and will be published in the semi-annual standardization bulletin issued by the American Mining Congress.

Coal Mine Fatalities—Reports from all states except Kentucky, tabulated by the Bureau of Mines, show 172 coal mine fatalities in November, 1920, as compared with 90 in 1919. The rate per million tons of coal mined was 2.94, as compared with 3.40 per million tons during the parallel month of the year before.

TWO NEW SENATORS FROM MINING STATES

Left, Senator R. H. Cameron of Arizona. Right, Senator J. W. Harreld of Oklahoma. Senator Cameron is interested in silver and copper mines and power projects. He was a delegate to Congress at the time Arizona was admitted to statehood. Senator Harreld is interested in oil.

COAL REGULATION FIGHT EXPECTED TO BE RENEWED IN NEXT CONGRESS

THE CALDER BILL will not be passed during the present session of Congress. It, or some other measure of a similar nature, will be introduced in the next Congress, probably early in April, and the drive to place the coal industry under strict government control is expected to result in a finish fight.

The Senate Committee on Manufactures has devoted several months to consideration of the coal industry and all of its various ramifications. It has listened to representatives of scores of organizations and government departments and a large number of individuals. Two other Senate committees during the present session have also taken up the coal question, but the House has not considered it at all. It is thought in many quarters that the Calder Bill will emerge from committee so amended as to be more objectionable than the original measure, but even if the Senate takes final action during this session it will be impracticable for the House to do so. And since all proposed bills un-enacted on March 4 will expire automatically, it cannot be predicted whether the battle in the next Congress will be waged over the Calder Bill, re-introduced, or some other and entirely new measure.

Into the Senate hearings on the Calder Bill have been injected discussions, reports and prophecies concerning nearly every business and industrial problem which the coal mining industry even remotely touches. Among the questions considered were car shortage, price fixing, hours of labor, participation of government officers in coal sales, exportations, combinations in restraint of trade and storage of fuel in summer by householders.

At one of the last hearings before the Senate Committee on Manufactures, Edgar Wallace of the American Federation of Labor, who admitted he had not been in the Kansas coal field since 1892, injected the situation there into consideration of the Calder measure. Mr. Wallace wanted to deny that Kansas coal workmen had absented themselves to any great extent, and to enter a vigorous objection to the passage of any legislation intended to prohibit strikes. In fact, he made the emphatic statement that miners would strike anyway, and if necessary would strike against the government.

"We object to legislation to prohibit strikes," Mr. Wallace said. "Such legislation would lead to outlaw strikes and strikes in defiance of the government. Labor's unrest, which has heretofore been directed against the employer, without any great injury to the country as a whole, would be directed and far more bitterly against the government if an attempt was made by the government to set prices or to formulate a tribunal that would act as a final arbiter of industrial questions. Collective bargaining must be safeguarded. We have been trying for thirty years to obviate strikes, but if we have not the power to strike as a last resort, all of our attempts at collective bargaining would fail." Mr. Wallace said that the last bituminous coal strike would have been avoided if the operators and miners had been permitted to continue their joint agreements.

Activities of the National Coal Association were investigated by the committee in December and again in February. The committee secured certain records in the association's office, and quite a controversy was waged as to whether these records were "seized" or turned over to the committee voluntarily by the association's officers. During the February hearings, Senator La Follette intimated that the association had tampered with its own records in order to hide the facts, and Senator Reed, of Missouri, claimed that the association should be held guiltless until guilt was proved. The Missouri senator held that the association's records had actually been seized by the Calder Committee and that the seizure was illegal. Those parts of the committee's records which cover this phase of the hearing are both lengthy and interesting.

For a while early in February the investigators found themselves considering retail problems in the District of Columbia. J. C. Ritter, formerly a Washington retailer, told the committee he had been driven out of business by his competitors, who belonged to an association of dealers, because he undersold them. Much time was given to hearing Mr. Ritter and those whom he accused.

W. W. Griffith, who bought out Ritter, was called by the committee, but upon the advice of counsel he ceased giving testimony before the committee had secured from him all the information it desired. He was told by his attorneys that Assistant Attorney General Nebeker had taken up the District of Columbia coal situation and might possibly inaugurate prosecutions. Judge Nebeker said that, "During the war it was necessary that certain combinations be formed such as those organizations under the Fuel Administration. Some of these might have constituted a technical violation of the law, but what we are particularly interested in is the situation following the armistice. Not only in the coal trade but in other lines combinations were continued for selfish ends instead of for the public protection."

Upon another occasion Representative Huddleston of Alabama urged the committee to do something to bring about storing of coal during the summer months and the equalization of the supply of railroad cars. He stated that the whole "buy coal now" movement of 1919 was carried on only to bring people to buy coal at high prices. He favored government ownership of railroads and terminals as being necessarily involved in the question of coal supply.

The American Wholesale Coal Association has issued a digest, in which George H. Cushing, director, sums up the Calder Bill developments as follows: That while for five months in the summer of 1920 prices on an undetermined percentage of coal were high, they were due to a world-wide disturbance in business growing out of the war; that even with this disturbance high prices would not have prevailed had sufficient transportation facilities been available; and that regulation of coal in peace times as a punishment for indiscretions of coal men would be unjust. He argues that the Calder Bill abridges the right of private contract, deprives the merchant of his right to select his customers and name his price; and that it dispossesses the owner of the land of his property, all of which he classes as vicious.

OPERATORS ORGANIZE TIDEWATER COAL EXCHANGE

DR. HENRY MACE PAYNE, chairman of the Coal Export Committee of the American Mining Congress, has been made a member of the executive committee of the Tidewater Coal Exchange, organization of which was perfected at a meeting in Knoxville, Tennessee, during the first week in February, and headquarters of which will be at Charleston, S. C. Thirty companies, with an uncontracted output of 3,945,000 tons, became charter members of the exchange.

Officers elected, who with the others listed became members of the executive committee, are as follows: President, L. C. Gunter, Southern Appalachian Coal Association; secretary-treasurer, J. E. McCoy, Southern Appalachian Coal Association; John E. Patten, Chattanooga, representing N. C. & St. L. Railway operators; John L. Boyd, Knoxville, representing Jellico field; R. E. Howe, Middlesboro, representing Middlesboro field; E. C. Mahan, Knoxville, representing operators at large; Guy Darst, Knoxville, representing the Harlan and Virginia operators; G. W. Stephenson, Nashville, representing operators on the Tennessee Central Railroad and on the Q. & C. Railway south of Harriman; K. W. Dyas, Stearns, representing operators on the Q. & C. Railway north of Harriman; I. L. Graves, advisory representative Southern Railway at Knoxville; Dr. Henry Mace Payne (with F. C. Koenig as alternate) of New York, representing transshippers and Tidewater Coal Exchange, Inc.

TRADE COMMISSION MAKES FINAL COAL COST REPORT

A BULLETIN covering coal operations in the states of Iowa, Kansas, Arkansas, Oklahoma, Missouri, Colorado, Texas, New Mexico, Montana, Wyoming, Utah, Washington, and North Dakota was issued during the month by the Federal Trade Commission. This bulletin completed the series in which the Trade Commission handled the coal trade of the entire country. It covers three years. For 1918 it is based on reports of 394 operators who mined 61,000,000 tons from 628 mines, and for 1916 and 1917 it is based on reports of 27 operators who mined 4,600,000 tons yearly. For the production of 61,000,000 tons the commission says the average annual total f.o.b. mine cost ranged by districts from \$1.08 to \$4.45 and the average sales realization from \$1.36 to \$4.66. The labor cost in 1918 was from 39 to 53 per cent higher and the total f.o.b. mine cost in 1918 was from 42 to 48 per cent higher than in 1916. The sales realization in 1918 was from 46 to 69 per cent higher than in 1916.

NAVY CRITICIZED FOR FAILURE TO DEVELOP ALASKAN COAL

DURING A HEARING of the House Committee on Appropriations, Chairman Good criticized the Navy Department for failing to develop Alaskan coal resources, and also for declining to sell fuel to the coast guard and other government sections. He went so far as to intimate that the navy was "in league with interests boosting fuel prices."

Coast guard officials testified that although the navy had \$1,000,000 available for use in developing Alaskan coal, it refused to do so, and that as a result the coast guard was compelled to pay \$50 per ton for coal mined at Nome and St. Michaels. They also claimed that the coast guard, which formerly obtained fuel oil and coal from the navy, had lately been unable to do so on the ground, as the navy officials said, that supplies could not be spared.

Chairman Good expressed the opinion that the navy should have been mining coal in Alaska for two or three years and that he could not understand the navy's attitude.

January Anthracite Movements

SHIPMENTS of anthracite during the month of January, as calculated by the Anthracite Bureau of Information, amounted to 5,740,538 gross tons, a decrease of 695,782 tons as compared with December. Although there were only twenty-five working days in the month, the output was almost equal to that of November 1920, which amounted to 5,765,347 tons, and was greater than that of January 1920, of 5,713,319 tons.

Shipments of anthracite during the last month of 1920 amounted to 6,436,320 tons, an increase of 670,973 over November. The average daily shipments were 268,180 tons, a falling off from the November average of 274,540 tons.

ELLIS ISLAND ENGINEER WANTS TO QUIT USING COAL

SUBSTITUTION OF OIL burning equipment for coal burning equipment at Ellis Island at a cost of $100,000 is urged by Capt. A. B. Fry, engineer in charge of that immigration station, in a letter to Congress. Captain Fry said the use of oil would save $28,000 annually in the cost of labor, and that the heating plant could be made to furnish more satisfactory service all around. Chairman Good of the House Appropriations Committee, to whom Captain Fry's request was directed, opposed the change from coal to oil on the score of shortage of oil. Captain Fry insisted that while oil scarcity was a reality, there nevertheless were many fields, including newly discovered ones, which produced oil suitable for fuel purposes, although it could not be refined. He claimed also that big oil interests had informed him that the fuel oil market had already eased up.

GOVERNMENT USED INFERIOR COAL

THE ADMISSION that a poor quality of coal had been provided by the government fuel yards to the government departments at Washington was made to a congressional committee by G. S. Pope, in charge of the yards. Mr. Pope stated it had been found necessary to relax specification requirements in order to secure any coal at all. Mr. Pope had been questioned by members of the House Appropriations Committee who had received complaints as to the quality of coal distributed by the yards.

Although there were times when the coal supply in the government yards ran very low, Mr. Pope said that no difficulty existed any longer in securing bituminous, and that a supply sufficient to last eighteen days was on hand. He also said that coal which cost $6 a ton last year was now being purchased for $3.25 a ton, and that some of the mines which had furnished the yards poor coal were now closing down because they could not compete in the open market with mines which were selling good coal.

Lighthouses Stocked Up on Coal

ALL OF THE anthracite and half of the bituminous coal which will be required by the Lighthouse Service during the remainder of the fiscal year ending June 30, has been purchased. The service uses 60,000 tons of bituminous and 9,000 tons of anthracite annually. Costs for the current year amount to about $4.50 per ton more on anthracite and $3.50 more on bituminous than for last year. Prices average $9.56 for anthracite and $6.78 for bituminous, although during a period of severe shortage $15 was paid for bituminous and $19 for anthracite at Baltimore and Norfolk. The Lighthouse Service buys its coal at various places, generally at points where it is used. It formerly secured its supplies from the navy, but has been unable to do so for the last two years because the navy has had difficulty in meeting its own needs. The Lighthouse Service estimates that it will have to pay $11 for anthracite and $10 for bituminous next year.

Shipping Board Receives Coal Bids

TENDERS for furnishing bunker coal for merchant ships were received by the U. S. Shipping Board February 28, and awards will be announced early in March. The contracts will provide for coal for one year at the following places, in the amounts stated: Boston, 17,500 tons; New York, 150,000 tons; Philadelphia, 180,000 tons; Baltimore, 75,000 tons; Norfolk, 225,000 tons; Charleston, 36,000 tons; Savannah, 30,000 tons; Jacksonville, 18,000 tons—a total amount of 731,500 tons.

AMOUNTS OF FUEL CONSUMED BY UNITS OF AMERICAN NAVY

FUEL BIDS will be received by the navy March 8. Proposals have been asked for 2,230,850 tons of bituminous for ships and 329,920 tons of bituminous otfor her purposes, and 48,320 tons of anthracite for ship uses and other purposes.

Announcement was made from the Navy Department during February that the practice of commandeering had not been abandoned. In fact, it was intimated that the bids which will be opened on March 8 are not expected to result in the award of contracts for all of the navy's requirements because of the large amount of fuels sought and the high level of prices which still prevails.

The navy's fuel bill for the last six months of 1920 amounted to $18,267,412.

The amounts of coal and fuel oil consumed by individual ships are interesting. Estimates for next year, given by Admiral Peoples to a Congressional committee, were as follows (tons referring to coal and barrels to oil):

Six dreadnaughts, one year, 111,000 tons and 205,300 barrels; seventeen oil burning dreadnaughts, one year, 1,015,000 barrels; two dreadnaughts in reserve, 8,000 tons; two cruisers in commission one year, 87,000 tons; three for six months, 15,000 tons; one for one month, 5,000 tons; ninety-six destroyers, one year, 1,355,000 barrels; 202 destroyers in reserve one year, 655,000 barrels; 131 submarines, one year, 95,000 barrels; 8 in reserve one year, 2,000 barrels; four destroyers tender, one year, 30,200 tons; 500 barrels; two destroyers, one year, 95,000 barrels; one for 8 months, 40,000 barrels; two submarine tenders, one year, 50,000 barrels; three for one year, 20,000 tons, 12,000 barrels, one for one year, 7,000 barrels; two for one year, 12,000 tons; nine eagle boats, one year, 53,500 barrels; one fleet repair vessel, one year, 5,000 tons, 30,000 barrels; one for one year, 9,000 tons; one for one year, 50,000 barrels; two hospital ships, one year, 14,000 tons; one supply ship 55,000 barrels; three for one year, 18,400 tons; two target repair ships, one year, 5,000 tons; one for one year, 4,500 tons; aircraft tenders, one for one year, 600 tons and 15,000 barrels; aircraft carriers, one for one year, 26,000 barrels; mine layers, two for one year, 75,000 barrels; colliers, eight for one year, 86,300 tons; oil tankers, nine for one year, 455,900 barrels; one for one year, 12,000 tons; one for eight months, 18,000 barrels; transport cargo ship, eight for one year, 124,500 tons; ammunition ships, two for one year, 10,000 tons and 70,000 barrels; gunboats, fourteen for one year, 58,200 tons and 15,000 barrels; one for nine months, 2,000 tons and 10,000 barrels; survey ships, two for one year, 5,800 tons; fish ships, two for one year, 25,000 tons; station craft, eleven for one year, 38,000 tons; two for one year, 19,000 barrels; experimental ships in reserve, one for one year, 3,000 tons; eagle boats in reserve, 40 for one year, 60,000 barrels; mine sweeper and tugs, thirty-five for one year, 286,000 barrels; 18 for one year, 36,000 barrels; seagoing tugs, thirty for one year, 30,000 tons and 350,000 barrels; harbor tugs, sixty for one year, 20,000 barrels; miscellaneous ships, thirty-five for one year, 65,000 tons.

The estimates for next year provide for 96 destroyers in commission and 202 in reserve, and 131 submarines in commission. Representative Kelley said there would not be more than 75 or 80 submarines next year, as the engines for some had not been satisfactory.

GOLD LEGISLATION CAMPAIGN ADVANCES

FOUR DEVELOPMENTS stand out prominently in the hearings on the McFadden Bill:

1. The measure will not be enacted into law at this session of Congress.

2. It is constitutional.

3. Most serious consideration is being given by the House sub-committee to the beneficial effects the McFadden Bill might have on the maintenance of the gold standard. The sub-committee has accepted the position of the American Mining Congress, emphasized by the Secretary at this last hearing, that this is the great compelling argument in favor of the measure, and that benefits accruing to the gold mining industry will be incidental and of minor importance compared to the benefits to the country as a whole.

4. A luxury tax on gold articles, as large or larger than the ten dollars an ounce proposed in the McFadden Bill, will be urged by influential members of the next Congress, irrespective of whether the measure providing for payment of a premium to producers of new gold is adopted or defeated.

The last hearing was held by the House Ways and Means sub-committee on February 8 and at its conclusion Chairman Charles B. Timberlake announced the future course to be taken would be decided upon later. It is generally believed that a report from the sub-committee is the most which can be hoped for at this session.

Attorney General Palmer had already informed Chairman Fordney that he could not give an opinion upon the constitutionality of the measure, as such action would not only be without precedent but directly in violation of law. Upon hearing of this announcement Congressman McFadden submitted a memorandum from a brief by Judge William Howard Taft, filed while he was Solicitor General, and holding that the government under similar circumstances could constitutionally pay a bounty to sugar producers. Mr. McFadden inferred that the government manifestly could do the same for gold producers.

While witnesses for the Jewelers' Vigilance Committee were on the stand, Congressman Garner let it be known that he anticipated an effort to place a tax on gold used in the manufactures and the arts would be made during the tariff hearings, and added: "That ought to be done. I do not think it is an essential industry. I am willing to hear the arguments as to the advisability of this and I presume we will hear you gentlemen at that time."

This last hearing was held mainly for the purpose of giving the opposition to the McFadden Bill an opportunity to put in their final argument. The opposition witnesses were G. Niemeyer of 59 Cedar Street, New York, and Morris L. Ernst of the law firm of Greenbaum, Wolff & Ernst, New York, and Professor E. W. Kemmerer of the chair of economics of Princeton University, all representing the Jewelers' Vigilance Committee. Their testimony was replied to by Congressman McFadden, and H. N. Lawrie and Secretary J. F. Callbreath of the American Mining Congress.

An outstanding feature of the testimony given by the legal witnesses for the jewelers was that they made no argument against the collection of a tax on gold used in manufacturing and the arts, but confined their opposition to the payment of a premium to producers of new gold. Both attorneys admitted there could be no question about the constitutionality of the tax, but insisted the government had no right to collect the tax from the public generally and pay premiums to producers of gold. Congressman McFadden replied to this portion of the attack, including in his statement an excerpt from a brief prepared by Judge William Howard Taft while he was Solicitor General of the United States and submitted to the Supreme Court on October 24, 1891. Judge Taft said:

"Here was a case where citizens, by reason of heavy sugar duties which had existed for many years, had been induced to make large investments in the plant required for the production of sugars; and now it was proposed by Congress to remove the duties because the revenue which they produced was more than sufficient for the uses of the government. The removal of duties would absolutely destroy fifty or sixty million dollars' worth of property invested in this industry and protected by the duties. To enable persons whose property would be thus injuriously affected to prepare for the change, the government was under a moral obligation to reimburse them for their loss or to permit them by a bounty to continue the business until such time as the business might be self-sustaining."

The application of Judge Taft's point was made by Congressman McFadden as follows: "Arbitrarily fixing the price of gold, the government has greatly penalized the producer of gold during the past five years by so greatly depreciating the purchasing power of the dollar, whereas, on the other hand, the same law is accountable in effect for subsidizing the jewelers and other consumers of gold by supplying them with gold at the pre-war price. In this respect the government has created a moral obligation which must be taken into account." If it would have been constitutional then to pay a bounty to sugar producers, it would be constitutional now to pay a premium to gold producers.

Professor Kemmerer testified from the standpoint of the professional economist, making the familiar argument that increased production of gold had been the cause for high prices a few years ago. He was forced to admit, however, that the increase in the circulation of substitute paper currency had been largely responsible for price increases of the last four or five years. Professor Kemmerer also made the statement that gold was as free to respond to the law of supply and demand as any other commodity, although the response was in the nature of variations in the cost of production and not in the price of the metal itself. The jewelers introduced a memorandum of an opinion by another college economist, Professor Edwin R. A. Seligman of Columbia, to the effect that gold differed from other commodities in that in so far as it served as a standard of value and a medium of exchange it is always purchased by the mints at a price which is definitely fixed in the United States and is unaffected by variations in demand or supply.

Professor Kemmerer also insisted that jewelers and other manufacturers of gold articles were not receiving a subsidy, although they still purchase their gold raw material at the pre-war price while the average price of all other raw commodities is over eighty per cent greater than in 1913.

Advocates of the McFadden Bill were also informed by Professor Kemmerer that the payment of a premium to producers of new gold would increase the cost of production and actually make gold mining less profitable than it is today. His reasons were that "If the bounty stimulated gold production it would tend to make gold cheaper, for it either results in increased supplies thrown on the market to the extent that it makes gold cheaper while it makes prices higher; therefore the more you stimulate production by a bounty the cheaper you make gold and the higher you make other prices of supplies, including cyanides and explosives and all other items that go into the mining of gold. That would mean higher prices, higher costs, and the higher the costs the more bounty needed to meet these higher costs. You have what seems to be a vicious circle. I do not see where it is going to end."

During the course of his examination Professor Kemmerer stated his belief that prices of commodities in general never would descend all the way to the pre-war level. He thought they might eventually become stabilized at about twenty-five per cent above the pre-war level.

Congressman McFadden in cross-questioning Professor Kemmerer quoted from a recently published statement of the economist in which he said: "The answer to the question of how far deflation should go is largely a question of the re-establishment of adequate gold reserves." Congressman McFadden then asked this question: "If, as you say, there is a question of the re-establishment of the gold reserves, would it not be better to increase production?" Professor Kemmerer replied that there was so much gold in the world that the amount of increased production which the McFadden Bill would stimulate would be infinitesimal, and that the only proper method of accomplishing currency deflation would be "through the restriction of this highly inflated paper money and have the currency based on the gold reserve of the world."

Mr. Lawrie answered this statement by pointing out that since the percentage of gold is so small as compared to the volume of credit and currency the effect of larger production would be increased rather than diminished, and that deflation could be accomplished by increasing the gold reserve as well as by decreasing the volume of the note circulation.

The chairman announced the committee had received a letter from Secretary of the Treasury Houston saying the Treasury had nothing further to offer.

Filing of additional briefs by the advocates or opponents of the McFadden Bill will be permitted.

NATION'S FINANCIAL SECURITY DEPENDS ON GOLD BILL

THE FACT that the financial security of the United States, rather than the prosperity of the gold miner, depends upon the passage of the McFadden Bill, was brought to the attention of the sub-committee of the House Committee on Ways and Means by Secretary J. F. Callbreath, of the American Mining Congress, at the close of the February 8 hearing. Mr. Callbreath also took occasion to correct the frequently-repeated statement that the American Bankers' Association had formally recorded its opposition to the bill.

Mr. Callbreath's statement follows:

"One question propounded by Mr. Garner should be given consideration; that is, whether this proposed bill is designed especially for the benefit of the miners. Perhaps I as nearly represent the mining industry as any one else, through my connection with it as Secretary of the American Mining Congress. If I were sitting in your place I would not consider any legislation specifically for the benefit of the gold miner. I do not think the gold miner is entitled to specific relief by the government any more than the people of any other specific industry, except as the business of gold mining becomes necessary to the nation's prosperity. The question before you is whether the production of gold is so necessary to the nation's industrial prosperity as to justify your extending government aid, not for the benefit of the gold miner, but for the benefit of the nation. We have in this country a billion dollars in gold in excess of our share of the world's supply and we can expect that this excess will drift back to those countries from which it came during the war. Since that time the world's gold supply has not been greatly increased.

"Prof. Kemmerer has told us that the total monetary supply of gold in the United States approximates $2,800,000,000 and that of this amount approximately $1,100,000,000 is likely to flow to other countries as times become more normal.

"We are also advised that the credit money based upon our present increased gold supply is several times larger than it was in the pre-war period.

"What is going to happen to credit in this country if we lose the $1,100,000,000 of gold and, practically, if, while this gold is being withdrawn by foreign countries, there is no supply large, or small, flowing into the upper end of the reservoir from which we are drawing at the bottom?

"It is of vast importance that we maintain the public's confidence in the money upon which business transactions of a nation are based.

"The withdrawal of 11/28ths of our gold reserves without even the normal production to refill the reservoir may lead the public to the conclusion that we will soon be in the same condition as European countries which now find themselves with a depreciated currency because the gold reserve is inadequate to give it support.

"The currency of Germany is practically worthless because it lacks gold. Italy with a little more gold has currency of more value. France with more gold than Italy has a currency not so much depreciated. England has more gold than any of these countries, but not enough to keep her currency at par. The United States is the one of the few great commercial nations which maintains its currency at par.

"The question before you, gentlemen of the Committee, is one of great importance and one which should be settled without reference to the interest of any branch of industry.

"You are not here to legislate for the benefit of the gold miner unless the gold miner's production is found to be so essential to the nation as to require his operations for the benefit of the whole. Unless the nation needs the gold miner, the gold miner should not have your support.

"Our money is now at par because we have more than our share of the world's gold supply. Unless our gold mines are kept in operation the day will come when we will be without the proper support and it will be difficult, if not impossible, to maintain our credit.

"If our gold mines are permitted to go out of operation, it will take many years, if it ever will be possible, to re-open them and it is necessary now if we need the gold to keep these mines in operation because production of gold cannot immediately respond to an increased price.

"This is well illustrated in the field of silver production. For the last two years under the Pittman Act silver has brought a relatively higher price than ever before in this country, and yet the production of silver fell off last year.

"A gold mine closed, dismantled and the workings filled with water is not likely to be opened up again. I once operated a mine which produced lead, silver and gold, but which has been closed for some years. It would be practically impossible to reopen it because of the danger of taking any man inside its workings. It would be inviting him to commit suicide.

"I feel, gentlemen, that you should consider this question of the country's necessity to keep up its gold supply. Prof. Kemmerer has pointed out, but I do not think he is quite consistent, that if we stimulate gold production that this will further increase prices so that an increased gold bonus will be necessary to maintain production, but a few moments later he stated that any possible production was so small a proportion of the world's gold supply that it would not be noticed. I have in mind that the gold supply of the world ought to be made to increase as nearly as possible in proportion to the increasing business transactions of the world.

"Gold today performs a larger service than it did before the war, because of its more rapid movement and because of the fact that gold is gathered into Federal Reserve banks of the country where it may safely justify a large credit basis.

"Even with these advantages, I do not believe it possible to maintain the gold standard if we stop production, because the total world's production in normal times is only approximately $400,000,000 per year and it would take twenty years to produce the amount which is now in the monetary systems of the world.

"Reference has been made to the adverse report of the Gold Committee of the American Bankers' Association. The fact is that two national conventions of the American Bankers' Association passed resolutions asking aid for the gold industry. Later on its Legislative Committee, consisting of more than one hundred members, made a report favorable to the McFadden Bill.

"The Trust companies section of this Legislative Committee voted unanimously in favor of the bill. Thereafter a subcommittee, composed of three men, made an adverse report. Three men reported adversely against a report of a committee of over one hundred members and in opposition to the resolution passed at two separate annual conventions of the American Bankers' Association. This adverse report was not adopted by the Association, but was referred to another committee which now has the matter under consideration. I think we have a right to say that this Association has not declared itself opposed to the McFadden Bill."

WELL SAID, MR. LUDLOW

CONGRATULATIONS are due to the American Institute of Mining Engineers for displaying great wisdom in the selection of a new leader, and to President Edwin Ludlow for calling upon the membership in his inaugural address to assume their full share of responsibility in solving the national problems of reconstruction.

The greatest problem, as President Ludlow aptly puts it, consists in so adjusting wages and working conditions as to make labor efficient and bring the country back to a normal production basis without going through a period of strikes and disorganization. Ever since organized labor by threat of physical violence compelled the passage of the Adamson Law—in itself the most shameless and undemocratic measure ever perpetrated upon the American people and in its effects the instigator of a spirit of lawlessness and bolshevism—it has been inevitable that there should come a time of reckoning. That time has arrived. It is here, now. The manner in which the reckoning is consummated rests largely with Congress, and, as President Ludlow again says: "There has never been a time in all our history when sane, conservative influences were more needed than at the present to advise the legislative branch of the government."

In meeting great emergencies during the war Americans grew accustomed to the use of a permissible form of overstatement. "Food will win the war," Mr. Hoover said. ... the war," said Mr. McAdoo, and Mr. ... that ships would win the war. ... the war, but ... on ... the ... neers ... ' and ... of the ... in the ... chwab ... , Presi- ... n Min- ... hington ... d passed ... into the ... osition to ... engineers can exercise, and is glad their president tells them "The brunt of this work falls on you" instead of saying "Let George do it."

Congress is responsive and glad to be advised. The American Mining Congress, representing an industry which is prosperous only when the country is prosperous, and which desires that every safe and conservative element of the population unite in the effort to make the country prosperous once more, extends its congratulations to President Ludlow and all the members of the American Institute of Mining Engineers.

Mr. Ludlow was installed as president at the 123rd meeting of the association, held in New York February 14-17. The sessions were largely attended and the discussions covered mining and milling, coal, non-ferrous metallurgy, iron and steel, petroleum and gas, non-metals, metals, industrial relations and treatments of steel. The banquet at which the new president was installed was held at the Waldorf-Astoria, and the extensive entertainment program ran throughout the entire four days. E. P. Mathewson was chairman of the general committee on arrangements.

EDWIN LUDLOW

Recently Inaugurated President of the American Institute of Mining Engineers

Operators Have Half Billion Dollars In National Banks

COMPTROLLER of the Currency Williams told a senate investigating committee during the middle of February that loans and discounts to manufacturing corporations amounted to $2,862,000,000, or 21 per cent of all bank loans. Coal corporations and firms had $156,000,000 on deposit in the various national banks, miners of iron and manufacturers of steel and iron had $172,000,000 on deposit, and oil producers $200,000,000.

CHICAGO THE NEXT CONVENTION CITY

"OCTOBER 17—CHICAGO." This is the notation which should appear upon the date book of every member of the American Mining Congress and, in fact, of every mining man in America, including Canada and Mexico.

Accepting the invitation extended to the Denver convention by the Chicago Association of Commerce and the enthusiastic group of Chicagoans who attended the Denver meeting, the officers of the Congress have closed all arrangements for a great meeting and a greater mining show to be held in the Windy City beginning on the date named and lasting one week. John T. Burns, assistant secretary of the Congress, who has been in charge of the conventions of the last two years, has just opened permanent convention headquarters in the Congress Hotel, Chicago, from which city the preliminary notices and invitations are going forward to manufacturers and mining people as well as to the various state administrations interested in mining.

Mr. Burns is making an extended western trip in connection with the plans for a national show of some magnitude and will attend the international meetings in Spokane and Portland and address several groups of operators now being organized for the purpose of arranging to finance state exhibits which will be a credit to the states represented.

The sessions of the Congress will be held in Chicago's great Coliseum, where President Harding was nominated last summer. Five conference rooms will be built to accommodate the continuous sessions of the various affiliated organizations. Morning conferences and social affairs have been scheduled for the Congress Hotel, which is but a ten-minute walk or five minute ride by car or taxi from the Coliseum.

The Illinois Committee, which has been organized by Hon. Francis S. Peabody, the general chairman, is composed of the following leaders in Illinois industrial affairs:

HON. FRANCIS S. PEABODY, *Chairman*, president Peabody Coal Co., Chicago.

JAMES H. CHANNON, *Chairman Exposition*, president J. H. Channon Manufacturing Co., Chicago.

JOHN T. BURNS, *Secretary*, assistant secretary American Mining Congress, Congress Hotel, Chicago.

H. H. MERRICK, *Treasurer*, president Great Lakes Trust Co., Chicago.

HARRY C. ADAMS, president Peerless Coal Co., Chicago.

D W. BUCHANAN, president Old Ben Coal Corporation, Chicago.

E. J. BUFFINGTON, president Illinois Steel Co., Chicago.

F. K. COPELAND, president Sullivan Machinery Co., Chicago.

W. L. HODGKINS, vice-president Brownell Improvement Co., Chicago.

DR. F. C. HONNOLD, secretary Illinois Coal Operators' Association, Chicago.

D. F. KELLY, general manager Mandel Brothers, Chicago.

CHARLES M. MODERWELL, general manager O'Gara Coal Co., Chicago.

A. J. MOORESHEAD, Madison Coal Corporation, Chicago.

ALBERT J. NASON, president Nason Coal Co., Chicago.

CHARLES PIEZ, president Link Belt Machinery Co., Chicago.

COLONEL WARREN R. ROBERTS, president Roberts & Schaefer Eng. Co., Chicago.

DON SEBASTIAN, president Bickett Coal and Coke Co., Chicago.

E. C. SEARLES, president Crerar, Clinch & Co., Chicago.

H. H. TAYLOR, president Taylor Coal Co., Chicago.

CHARLES WHEELER, Pickands, Brown & Co., Chicago.

James H. Channon, the chairman of the Exposition Committee, is one of the active spirits in the building of Chicago's industrial life and it is a guarantee of success to say that Mr. Channon is personally devoting several hours of his time daily to the preliminary work in connection with the arrangements for what is in reality the first serious effort to develop a national exposition of mines and mining equipment.

Mr. Burns spent last week in Washington in consultation with officials of the British, Mexican and American governments regarding official representation in the Chicago convention and exposition. Assurances have been given that Mexico will be well represented by an exhibit of petroleum, minerals and coal of importance to Americans from the standpoint of investment and operation. An invitation is going forward to the Canadian Minister of Mines and while in the West Mr. Burns will interest the Ministers of Mines of the various western provinces.

There will be exhibits from the Bureau of Standards, the Good Roads Bureau of the Department of Agriculture, the Bureau of Mines, Geological Survey, the Public Health Service and the Land Department, all of the exhibits being selected with regard to their value educationally as showing the development or possible development of America's mineral resources.

A committee of manufacturers will be in charge of the manufacturers section and the various mining and technical schools are being invited to take charge of the public division which will include the various state and county exhibits and educational displays.

For the first time, the value of good roads in the oil and mining fields will be shown, and the transportation section will include electric and gasoline tractors, trucks and trail equipment for both metal and coal sections. The American Association of Motor Truck Manufacturers will co-operate in making this section of the exhibit successful.

From this time forward high speed will be maintained in carrying forward the propaganda in connection with the Chicago meeting. The Illinois Manufacturers Association, the Chicago Association of Commerce and the State of Illinois have joined in the issuance of the invitations. The Committee on Arrangements includes representatives of the several branches of mining and allied interests. It is likely that when the Coliseum opens on the morning of October 17 next, the old conventioners who have attended the sessions of the Mining Congress for years will find many surprises in store for them, showing that the entire industrial machinery of the Middle West has combined to indicate its belief that Chicago is, as it professes to be, a great mining camp only awaiting this opportunity to make good on its claims.

CONGRESS CUTS BUDGET ESTIMATES

THE SESSION of Congress which will expire on March 4 has broken all records for slicing departmental budget estimates. Reductions of $1,570,202,837 for the fiscal year 1922 have been made, and to this extent at least Congress has lived up to the announced policy of some of the leaders —to reduce the tax burden by lowering expenditures. While the appropriations measures have not all been passed, it is believed that such changes as may yet be made in them will have very little effect on savings already effected in committee.

LYON SEES INDEPENDENT U. S. CERAMIC INDUSTRY

CHINA, POTTERY AND FIRE-BRICK manufacturers need no longer depend upon importations of foreign clays. The ceramic station of the Bureau of Mines at Columbus, Ohio, has conducted investigations which Dorsey A. Lyon, superintendent of stations, announces indicate the existence in America of beds of clay which after further experimentation can be made in large measure to meet the needs of American manufacturers. Thus, the ceramic industry may provide another instance of benefit accruing to American industries out of the war.

Mr. Lyon even goes so far as to express the opinion that the world's supremacy in ceramic trade matters may come to America.

Graphite crucibles which are indispensable for melting certain alloys and special steels used in war materials were made in the United States before 1914 from Ceylon graphite bonded with German Klingenberg clay. It was thought that high class crucibles could not be manufactured from American clays and graphites alone. The beginning of the war, which shut off exports from Klingenberg, found large stocks of Klingenberg clay in the hands of American crucible workers, but when these stocks were utilized it was necessary for them to begin the making of experiments. At first the use of new clays resulted in shortening the life of graphite crucibles from fifteen to sixty per cent. It was then that the Bureau of Mines took up the work of investigation at Columbus.

Tests were made upon several clays out of which twenty were selected. Of these twenty, eighteen were American, one English and one the German Klingenberg clay. After the laboratory tests were made, the results were applied in actual factory practice. Fifteen crucibles were made of each of the twenty clays, with the use of a standard graphite, in the regular manner at a Pennsylvania manufacturing plant. Ten of the crucibles of each clay were tested at a Detroit lubricating plant and five at a Lockport, N. Y., foundry. These tests showed that two American clays in brass melting crucibles tested higher than the Klingenberg clay and eight higher than the English clay. Tests on steel melting crucibles showed that thirteen American clays gave better service than Klingenberg and five better than the English.

At the present time 120 crucibles are being made and used at the Bureau of Mines stations to test the comparative properties of foreign and domestic graphites, samples of which have been procured from Alabama, Texas, Montana, New York, Ceylon, Madagascar and Canada.

Mr. Lyon concludes his report with the statement that no Klingenberg clay is used in America now, and that American manufacturers have begun to advertise that their crucibles are made out of American bond clays and are therefore superior.

One hundred clay samples have been tested at the Columbus laboratory, and pottery made from some of them appears to be the equal of that manufactured from imported clays. At the present time about fifty-six per cent of the white clay known as kaolin or china clay, used in making the better grades of pottery, is imported from England. At various times in the past English potters have attempted to have a ban placed upon the exportation from England of china clays, and it is considered probable that on account of this ban or for other reasons Americans will very soon be compelled to depend upon American clay. One single state, Ohio, would suffer more than all the others if this should occur before a satisfactory method of using American clays is evolved, since that state turns out fifty-two per cent of all domestic pottery. However, the United States has more white clays than any other country, and the Bureau of Mines will continue investigating their properties and studying methods of blending and refining, with the idea of assisting American manufacturers in becoming entirely independent of all foreign materials.

An agreement has been made between the Bureau of Mines and the Geological Survey of Ohio for investigating the fire-clays of that state. The Columbus station has begun investigating the refractory resources of the various states, and the work will probably continue for several years. During the war, fire-brick manufacturers were unable to supply the demand for brick used for furnace linings. The Columbus station is giving particular attention to the use of dolomite for this purpose. Two methods of burning dolomite are being tried.

MINERAL LAND WITHDRAWALS AND RESTORATIONS FOR YEAR

FROM DECEMBER 1, 1919, to November 30, 1920, 2,797 acres of coal land were withdrawn and 1,500 acres restored to entry. The total withdrawn acreage on the latter date was 40,142,725 acres.

There were no withdrawals or restorations of mineral, naval oil shale, oil shale, petroleum or potash lands during the period and the number of acres of outstanding withdrawals were: Mineral, 8,507; naval oil shale, 128,144; oil shale, 123; petroleum, 6,751,476; potash, 130,100. Fourteen acres of phosphate land were restored to entry, leaving 2,724,380 outstanding withdrawals. For power sites 48,134 acres were withdrawn, 2,210 restored, leaving 2,586,891 withdrawals outstanding. There were 120 acres outstanding under withdrawals as well drilling reserves. For all lands 153,290 acres were withdrawn; 757,290 acres were restored, leaving outstanding withdrawals of 58,082,552 acres.

Withdrawals of coal, mineral, and oil lands, outstanding, by states, follow: Arizona—coal, 141,954 acres; minerals, 8,507, petroleum, 230,400. California—coal, 16,643; petroleum, 1,257,229; potash, 90,678. Colorado—coal, 4,493; naval oil shale, 41,560; petroleum, 222,977. Florida—coal, phosphate, 119,723. Idaho—coal, 4,761; phosphate, 1,015,717. Louisiana—petroleum, 467,030. Montana—coal, 10,612,313; petroleum, 1,345,151; phosphate, 287,883. Nevada—coal, 83,833; oil shale, 123; potash, 39,422. New Mexico—coal, 5,585,208. North Dakota—coal, 10,624,561; petroleum, 88,894; ore-coal, 4,361. Utah—coal, 5,313,935; naval oil shale, 86,584; petroleum, 1,962,768; phosphate, 302,465. Washington—coal, 823,234. Wyoming—coal, 2,437,523; petroleum, 1,181,027; phosphate, 998,592.

Chromite In 1918 and 1919

CHROMITE SALES in 1918 aggregated 82,430 long tons, and 42,687 long tons were left unsold in the miners' hands, according to Geological Survey figures. Shipments of domestic chromite in 1919 amounted to 5,079 long tons valued at $129,302 or an average of $25.46 a ton. This was a decrease of 94 per cent in quantity and nearly 97 per cent in value over shipments of 1918.

Imports of chromite in 1918 aggregated 100,142 long tons and in 1919 to 61,404 long tons, the decline being nearly 39 per cent following cessation of the war demand. Cuba is the principal source of American importations. There were thirty-nine shippers in 1919—one in Wyoming, two in Maryland, three in Oregon and thirty-three in California.

A CLOSE-UP OF THE MEN WHO HANDLE YOUR FEDERAL TAX RETURNS

IS THE REVENUE DEPARTMENT HUMAN? Is it efficient? Are the tax returns of metal, oil, coal and timber operators handled by men who understand the peculiar, vexing problems of the metal, oil, coal and timber business?

It is rather customary to believe that all government departments are manned either by incompetent political appointees or heartless efficiency experts, that they are impersonal affairs, unapproachable and unsympathetic. Heads of departments are generally depicted as vain and pompous persons sitting at mahogany desks at the ends of long corridors lined with sentinels difficult to pass, and their chief administrative assistants as persons who could do something else as well, or as poorly, as what they are doing. It may give considerable comfort to the tax-payers to know that this is not a true picture, in so far as he and his business are concerned.

The Sub-division of Natural Resources, Bureau of Internal Revenue, was organized in the fall of 1918. R. C. Allen, who, during the war was a member of the Tax Advisory Board, and who, with A. P. Ramstedt of Wallace, Idaho, was a representative of the mining industry on that board, early foresaw the intricate difficulties attending the determination of taxes on incomes derived not only from mining but from all forms of wasting assets, including timber, oil and gas. The organization of a Division of Natural Resources, manned by competent engineers and accountants familiar with the wasting-asset industries, was early in 1918 considered by the Tax Advisory Board and Commissioner Roper. Mr. Allen was requested, on the basis of a memorandum submitted by him to the commissioner, with the approval of the board, to lay down a plan for the creation of a Division of Natural Resources in the Bureau of Internal Revenue. This was in September, 1918, or thereabouts. The memorandum devised by Mr. Allen was approved by Commissioner Roper, and at his request Mr. Allen became the first head of the division, at the same time acting as a member of the board. Dr. Ralph Arnold of Los Angeles, California, also a member of the board, assumed charge of the Oil Section and on the retirement of Mr. Allen in March, 1919, became the head of the division. Mr. Arnold was succeeded by Mr. J. L. Darnell, who, up to that time, had been Mr. Arnold's assistant, and had participated in the investigations under Dr. Arnold leading up to the publication of the Oil and Gas Manual. Mr. Darnell was succeeded by J. C. Dick, mining engineer of Salt Lake City. Mr. Allen subsequently became Vice President of the Lake Superior Iron Ore Association and a member of the Tax Committee of the American Mining Congress.

Following the armistice and the return to private practice of the engineers who patriotically served during the war period the American Mining Congress prevailed upon Commissioner Roper to continue the Natural Resources Division, assisting in the difficult task of obtaining men qualified to serve. J. C. Dick remained as chief of the division at personal sacrifice until recently, when succeeded by C. F. Powell, of Oklahoma City, Oklahoma, the latter formerly chief of the Oil Section.

C. F. POWELL

Acting Chief of the Sub-Division cf National Resources, Income Tax Unit

The five departments of the subdivision are the Metals, Oil, Coal, Timber and Audit sections, which are introduced in that order.

The Chief of the Metals Section is Major Orr Ross Hamilton, mining engineer, graduated from the Michigan College of Mines in 1906. During the six years following his graduation Major Hamilton worked actively at his profession in the copper and iron mines of South America, Cuba and Lake Superior region. From January 1, 1913, to May 1, 1917, he was state mining engineer with the Michigan Geological Survey. His work in this position embraced the re-appraisal of all the mines of Michigan every year, under the direction of R. C. Allen, state appraiser, whose assistant he was. From May, 1917, to June 20, 1919, he served in the Engineering Corps of the army. He was captain of Company B, 28th Engineers, and later commanding officer of the first battalion. On July 1, 1919, he resumed his work with the Michigan Geological Survey and on January 1, 1920, accepted a position as valuation engineer with the Subdivision of Natural Resources, Washington. Because of his extensive experience only thirty days elapsed before he was made chief of the section, which position he now fills.

Assisting Mr. Hamilton are thirteen graduate mining engineers, each of whom had had actual experience in various parts of the country before he passed the rigid examination for his present position. Not one of them was a political appointee. The list includes Frederick B. Hyder, of California; John A. Grimes, Minneapolis; William H. Kobbe, Pasadena, Cal.; Albert W. Gaumer, Pennsylvania; William H. Harrison, Palmyra, Tenn.; Frank T. Eddingfield, Washington, D. C.; Frank F. Donahoe, Butte, Mont.; Alexander R. Shepherd, East Ely, Nevada; William H.

MAJOR ORR ROSS HAMILTON
Chief of the Metals Section

CAPTAIN GODFREY M. S. TAIT
Chief of the Coal Section

HEADS OF DEPARTMENTS, SUB-DIVISION OF NATURAL RESOURSES

Wagner, Melford, Del.; John Seward, Nutley, N. J.; Sam P. Hatchett, Larnesa, Tex.; William H. Craigue, Washington, D. C., and Robert Davis, Butte.

Tax returns for lead and zinc mines are referred by Mr. Hamilton to Mr. Hyder, who has specialized in those metals and is in turn assisted by other engineers who are also familiar with the problems of lead and zinc operators. Mr. Grimes is directly in charge of copper and complex ores and Mr. Gaumer of iron and manganese. All non-metal cases are referred to the sub-section headed by William H. Kobbe. Instances illustrating the engineers' familiarity with conditions in the various mining fields are of frequent occurrence. Mr. Hyder, for instance, has recently handled tax returns covering certain Alaskan properties which he once examined in his professional capacity. Mr. Hamilton quite frequently receives tax returns from men with whom, and with whose holdings, he has long been acquainted.

The head of the Oil Section is Norval White, of California. Mr. White had considerable experience as an independent, and later with the Shell Company, before he entered the service of the department. His section of the Natural Resources Sub-division includes seven departments, six for the geographical divisions of the country and one for handling gas and casinghead gasoline. Russell Bell is the valuation engineer in charge of the Eastern part of the country; Burr McWhirt, the Gulf Coast; S. M. Greenidge, North Texas; S. M. Gutberlet, Oklahoma and Kansas; R. W. Wardwell, California; D. D. Riddle, Rocky Mountains; L. F. Terry, gas and casinghead gasoline. Each of these men had long experience in the field before he came with the government, and, equally to the point, the experience in the case of each was in the exact field in which the tax returns now referred to them originate. Few items of expense or exhaustion which confront operators are unknown to them. They are familiar with the difficulties of every oil field in the United States and are prepared to give sympathetic consideration, and understanding consideration to any claim which may be made.

NORVAL WHITE
Mr. White, whose home is in California, is Chief of the Oil Valuation Section

Captain Godfrey M. S. Tait, chief of the Coal Section, is a man of extraordinary varied experience. He is a recognized authority on combustion engineering and the chemistry of fuels, both solid and liquid, and is the inventor of the Tait Gas-Producer and Tait Gas Analysis Apparatus, as well as many other practical devices used in connection with the combustion of fuels. Born in London, England, he came to America as a child. He has made an intensive study of the coal fields of the United States, being personally familiar with all the mines in Missouri, Kansas and Iowa, a large percentage of the mines in West Virginia and numerous individual mines in Pennsylvania, Kentucky and Illinois. He was formerly a member of the American Peat Society and is conversant with the peat bogs of Canada. He has inspected

W. R. KING

Before becoming Chief of the Audit Section, Mr. King gained International experience as an Expert Mining Accountant

the coal mines of Wales and the oil shale deposits of Scotland. He is the designer and producer of coal gas producer plants now in use in many states, Canada and Mexico.

In 1907, Captain Tait began practicing in Washington as a consulting engineer. He closed his business to enter the American army and was at once assigned to the Chemical Warfare Service and given personal charge of the overseas transportation of gas-loaded shells. After the armistice he was assigned to estimate the damage to the French coal fields, and prepared a complete report of the type and extent of damage, cost of repairs and years necessary to complete the reconstruction. He also reported on the effect of the curtailment of the coke supply upon the industries of France. Upon the completion of these reports he returned to the United States and resigned from the army, taking the post of valuation engineer in the Subdivision of Natural Resources. Assisting him as chief of the Coal Section are E. J. Mahan, Louis W. Atkinson, C. T. DuRell, F. L. Clemens, T. H. Barrett and E. F. Lines. Each of these men is familiar with conditions in one or more of the coal fields of the United States. The coal operator's income and excess profits tax returns are handled by men with a thorough knowledge of labor conditions, market conditions, valuations and selling prices both of coal and coal lands.

Carl M. Stevens, head of the Timber Section, comes from Portland, Maine, is a graduate of the Yale School of Forestry and has had about as varied experience in timber as may fall to the lot of one man. Entering the Forest Service upon his graduation in 1912, he spent two years cruising timber in North Idaho and Montana. Then for a year he was in the Missoula, Mont., office and in entire charge of the work of the district. From 1915 to 1919 he was in charge of a forest unit in the Cabinet National Park, Montana. He has had the entire responsibility of cutting and selling for the government from 250,000,000 to 500,000,000 feet of timber annually, as well as appraising and estimating a similar amount at the same time for cutting the next year. The Timber Section is divided into eight departments, each covering a particular geographical division of the country and having at its head a man who has spent his life in the region concerned. These geographical divisions, and the men at the head of them, are: No. 1, New England, New York and Pennsylvania, Dean W. Martin; No. 2, Appalachian Mountains and Mississippi Delta hardwood territory, R. C. Hall; No. 3, East Coast pine region—Virginia, the Carolinas, Georgia and Florida, M. L. Rue; No. 4, Southern pine territory, Alabama, Mississippi, Louisiana, Arkansas, Texas and Oklahoma, J. B. Woods; No. 5, Rocky Mountains and Lake States, E. B. Tanner; No. 6, California, vacant; No. 7, Northwest Coast, W. T. Andrews; No. 8, Inland Empire—North Idaho, Montana and a bit of Eastern Washington, vacant. S. L. Wolf, who ranks with these men, assists them all as occasion requires.

When an income tax return from a timber operator reaches the Timber Section, there is usually some one to be found in that section who is familiar with the tract involved. Knowledge like this, gained through experience in the field, is required before any man can secure a position as valuation engineer, and this fact explains why Territory No. 6 and Territory No. 8 at present have no permanent sub-chief. Each of them will have a sub-chief just as soon as Mr. Stevens can find some patriotic twenty-five thousand dollar man who will take on the job for about five thousand dollars.

Even in the Audit Section the policy of having for administrative heads men experienced in mining is followed out. W. R. King, the chief of this section, comes from East Tennessee, and brings with him an experience gained through many years of expert accounting in coal, non-metals, oil, gas and timber operations. As a general expert accountant he worked from Chicago to Cuba, from New York to Texas, always in some mining line. He has had actual experience in the coal fields of Pennsylvania and Tennessee, in the marble regions of Georgia, the phosphate regions of Florida and the timber operations of Virginia.

The chief of the entire Sub-division of Natural Re-

CARL M. STEVENS

The Chief of the Timber Section has managed Western forests, which are among the largest in the world sources. C. F. Powell, was an oil operator in the fields of Kansas, Oklahoma and Texas, as well as a petroleum engineer by training and experience, even as late as two years ago, when he was induced to join the Income Tax Unit of the Internal Revenue Bureau as petroleum valuation engineer. Within four months after his arrival in Washington he was chosen as chief of the Petroleum Section, which position he held until the present month.

When a claim for deductions of any character reaches the Sub-division of Natural Resources, Mr. Powell refers it to the chief of the particulat section to which it belongs, that is, to the chief of the metals, oil, coal or timber section. There it is checked by one of the valuation engineers, and the chances are that the engineer to whom it is referred is a man who has worked in the identical field in which the property in question lies.

Arriving at the Audit Department, the deduction claim may again fall into the hands of old acquaintances. During the last month there have been received several claims on property on which the head of the audit section has worked. One mining operator two weeks ago came all the way from Alaska for a little friendly argument with one of Mr. King's assistants, only to find that the assistant had been associated a few years back with the Alaska property in question and was familiar with its every detail. The operator had no difficulty in obtaining sympathetic treatment. The troubles of the taxpayer are usually traceable to difficulty in compiling requisite data or to complications of the law and regulations, generally to the latter. Just as the courts of the land after these many years still have not settled all the fine points of law about which men disagree, and never will, so the Internal Revenue Bureau and the courts together have not fully and finally interpreted all the sections and phrases and clauses of the revenue laws. The problem of the taxpayer is serious and complex, and that is also true of the Revenue Bureau. The endeavor to play fair has led the laws and voluminous regulations into complications that are legion, but the trained specialists in the Sub-division of Natural Resources are proving of inestimable assistance in straightening out the tangle.

J. C. Dick Leaves Revenue Bureau

J. C. DICK has resigned the position of chief of the Sub-division of Natural Resources, Income Tax Unit, Internal Revenue Bureau, effective March 31, and will resume the practice of his profession as consulting mining engineer at Salt Lake City, his home. Mr. Dick has already relinquished the duties of office, and C. F. Powell of Oklahoma, formerl yhead of the Oil Section, has succeeded him. Mr. Dick accepted the office of chief of the Sub-division of Natural Resources at the request, and the very insistent request, of numerous mining operators, and his administration of affairs through a difficult period resulted in the straightening out of many problems vexing both to the department and the mine operators. He sought to resign several months ago, but was persuaded to continue in service a while longer. Mr. Dick always took a great interest in the general activities of the mining industry as expressed through the AMERICAN MINING CONGRESS, and was a leading speaker at the Denver convention.

Oil Saving Through Chartering of Ships

THE SUM OF $25,000 was saved on one cargo of fuel oil alone by the chartering of a ship to carry oil from Port Arthur to fueling stations in the north, according to a statement made by Admiral Peoples. The navy now has seven tankers under charter from the Shipping Board and wants to charter more. Admiral Peoples said in many instances it was economical to charter a vessel at one port in order to secure cheaper fuel at another port. He pointed out that while the cost of fuel oil at Hampton Roads was $3.25 per barrel, it was only $2.40 at Port Arthur.

HOPE REVIVED IN THE WEST, DR. HOLBROOK FINDS

"DECIDEDLY MORE hope is in everybody's mind in the West than was observable three months ago," is the opinion expressed by Dr. E. A. Holbrook, assistant director of the United States Bureau of Mines, upon his return from a tour of western experiment stations. After attending the dedication of the new Reno station and the meeting of superintendents at Berkeley, Dr. Holbrook spent several weeks studying western conditions, and he was especially impressed by the spirit of optimism which prevailed generally, by the increasing importance of coal in the western mining world and by the effects of the leasing law of February 25, 1920.

"Three months ago the price of metal was down, but those of materials and labor were not," Dr. Holbrook said. "Now that labor and materials have begun to fall, there is more hope in everybody's mind. I got that impression from more than one source."

The increased and still increasing development of coal mining in the West is one of the outstanding features of the last few years, as Dr. Holbrook sees it. He recalled that when he toured the West fifteen years ago everybody was talking in terms of metals, and added, "but now they are more intent everywhere on coal than you would suspect was possible for the West." He pointed out that whereas ten years ago the traveler through Utah would never hear of coal, now there was considerable interest taken in coal mining. He ventured the suggestion that the number of men engaged in mining coal in Colorado, New Mexico, Montana, Washington and Nevada would compare favorably with the number engaged in metal mining.

"Idaho, Nevada, Arizona and Oregon were never considered as coal producing states, yet they have deposits everywhere in their territory and are interested in the development of their local coals," he said.

Plants which formerly used fuel oil, including those which dismantled costly coal-burning equipment, have in many instances returned to the use of coal, Dr. Holbrook said, having come to the conclusion that cheap fuel oil could not be depended upon as a certainty any longer. Wood also is not available as it once was.

Dr. Holbrook exhibited a copy of a letter in which the Secretary of the Treasury had called attention to increased development of coal mining under the leasing law. The Secretary pointed out that late in 1920, 254 coal prospecting applications covering 250,000 acres had been received, also thirty-nine applications for leasing permits covering 75,000 acres, and that on two leases 300 miners were at work. But on February 1 the number of applications for coal prospecting permits had grown to 460.

"As the population and industries of the Western States increase, applications for coal leases will become more and more numerous," Dr. Holbrook said. "With leases already granted, and those which shortly will be granted, the Western States will soon be mining coal to the value of several million dollars per annum, and the amount will increase very rapidly."

Dr. Holbrook found that the leasing act was a very popular measure in the West, and that the belief that it would have a very beneficial effect was general. The thought that it would result in the real development of those minerals on public lands prevailed everywhere.

TWENTY-FIVE MINERAL INDUSTRIES SEEK TARIFF PROTECTION

DEFERMENT of the introduction of a general tariff measure until next October, and re-enactment early in April of the Payne-Aldrich law to serve as a stop-gap against foreign dumpings during the intervening six months, appears to be the Congressional program.

Twenty-five mineral industries are asking for protection under the new tariff law. The House Ways and Means Committee conducted hearings from early in January until February 16, and five days later went into executive session to consider the evidence before it and draft a bill for presentation to the new Congress. It is considered certain that in the formulation of the new law the following principles will govern:

1. The new tariff bill will bring in $500,000,000 annually, or double the current receipts.

2. Ad valorem duties will be replaced by specific duties wherever possible. Specific duties are less subject to loose practice in the making of manifests and invoices. Tariff income under specific duties does not fluctuate so directly with changes in market values of importations as does tariff income under ad valorem duties.

3. Tariffs will be levied on values computed at the port of entry rather than at the point of sale, in order to make the basis of tariff assessments less dependent upon foreign exchange fluctuations.

Herbert Wilson Smith, chief of the Tariff Division of the American Mining Congress, appeared before the committee in advocacy of a tariff on all minerals now on the free list and upon frequent occasions in behalf of particular relief for specific industries. He was in attendance at every session during the hearings. Upon different occasions, operators from various parts of the country appeared before the committee in person. Upon one occasion, Congressman Rhodes of Missouri, chairman of the House Committee on Mines and Mining, spoke to the Ways and Means Committee in behalf of a tariff on barytes, and upon another occasion he and Congressman Welling of Utah attended the hearings on lead.

Among the mineral tariffs which the American Mining Congress is urging are the following:

ANTIMONY—10¢ per lb. on antimony content in ores, matte and antimonial lead.

ARSENIC—5¢ per lb.

ASBESTOS—No rate fixed.

BARYTES—¾c lb. on ores; 1¼¢ ground; 1½¢ sulphide; 2¢ carbonate; 2½c chloride and lithopone; 5c nitrate; 8¢ peroxide. All other barium compounds 25% ad valorem.

BAUXITE—No rate fixed.

CHROMITE—Ore, 60¢ per unit CRO^3—refractories, 65¢ per unit CRO^3—ferro chrome, 11½c per lb; chromium salts, 90c per unit.

GRAPHITE—1c per lb. on ore under 50% graphitic content; 2c per lb. on ore over 50% graphitic content; lump graphite 3c per lb.; flake graphite 6¢ per lb.; graphite products and manufactures 5c per lb. plus 20% ad valorem; all tariffs based on graphitic content.

FLINT—

MANGANESE—Ore 40¢ per unit; ferro manganese $1 per unit.

MAGNESITE—Ore ½¢ per lb.; ¾¢ per lb. calcined; ¾c per lb. brick plus 10%.

FELDSPAR—

MARBLE—Blocks and slabs over 2" thick, $1 per cubic foot; 1½", 12½¢ per superficial foot; 1", 10c; less than 1", 8¢; finished 75% ad valorem.

MONAZITE SAND—15¢ per lb.

THORIUM—$3 per lb.

QUICKSILVER—50¢ per lb. of quicksilver.

MICA—Unmanufactured, 30¢ per lb. plus 60% ad valorem; cut 50c lb. 60% ad valorem; phonograph discs, 20c each, 60% ad valorem; refuse for grinding only, 1¢; ground flakes and dust, 2¢ per lb.

MOLYBDENUM—Ores and concentrates, 50c per lb. of MOS_2; $1 per lb. of molybdenum content in alloys.

PUMICE—

PYRITES—10¢ per unit of sulphur content.

POTASH—50¢ per unit K^3 O.

TUNGSTEN—$10 per unit of tungstic trioxide in ores, concentrates, or compounds; $1 per lb. of tungsten content in ferro-tungsten.

TALC—Crude, ½¢ per lb.; prepared, 1c per lb.; cut, sawed or cubes, 2¢ per lb.; manufactures of, 50% ad valorem; decorated, 60% ad valorem.

LEAD—2¢ per lb. of lead content in ores, matte, etc., 2⅛ in dross bullion, pigs and manufactures.

WHITE CHINA CLAY (Kaolin)—2½ manufactured, $6 per ton.

ZINC—2¢ per lb. on ores bearing 25% or more of zinc content; under 25% metallic zinc, 1½¢ per lb. on metallic zinc content; blocks, pigs or slabs, zinc oxide, white zinc, pigment not containing lead, 2¾¢ per lb.; zinc in sheets, strips, plates, or coils, zinc dust, 3¾¢ per lb.

The representatives of the barytes and lithopone industry met in the offices of the American Mining Congress for a series of conferences prior to their hearings before the committee.

Following these conferences the following appeared before the committee: Maximilian Toch, of the Durex Chemical Company, New York; C. P. De Lore and A. E. Stocking, representing the Missouri Barytes Lithopone Association, St. Louis, and W. S. Peebles, representing the Commercial Miners of Barytes, Cartersville, Georgia.

H. P. Baker of the New Idria Quicksilver Company of Boston, Mass., and A. C. Rocca of California appeared for quicksilver producers.

The following appeared before the Ways and Means Committee in behalf of tariff for mineral industries under Schedule "C": Lead—Jerome J. Day, of the Couer d'Alene mine operators, Wallace, Idaho; Ernest Bamberger, of the Utah mine operators, Salt Lake City; Clinton H. Crane, of the St. Joseph Lead Co., New York; F. F. Evans, of the Eagle Pitcher Lead Co., New York; Ferro-alloys—Paul J. Kruesi, of the South Ferro Alloys Co., New York; A. C. Morrison, of the Electro-Metallurgical Co., New York, for ferro-chrome; N. P. Pettnot of the United States Ferro Alloys Co., New York, for ferro-silicon; Nelson Franklin, of Denver; for ferro-chrome and ferro-tungsten; J. C. Cutter of the Climax Molybdenum Co., New York City, and Clifton Taylor of the Molybdenum Corporation of America appeared for molybdenum ores, concentrates and ferro-molybdenum; Arthur V. Davis, of the Aluminum Co. of America, Pittsburgh, Pa., on behalf of aluminum.

The chief of the Tariff Division of the American Mining Congress presented to the Ways and Means Committee two charts on the subject of the effect of tariff on prices in mineral industries. The first showed the range of price and production of ten unprotected mineral industries over a period of twelve years showing a wide fluctuation in price and a high uniform cost to the ultimate consumer. The second was a composite chart of protected mineral industries over the same period of time, showing the much narrower range of price fluctuation and therefore a much lower cost of the finished material to the ultimate consumer. These charts are shown on page 101.

At the conclusion of the hearings on Schedule "C" Walter H. Dennison, of Batesville, Arkansas, appeared in behalf of domestic producers of manganese ore from the Batesville District.

Consideration of minerals under the free list was begun on February 11. Appearing before the Committee were

Wilbur La Roe, Jr., representing the United States Potash Producers Association, who made a most interesting presentation covering the need for protection of the potash industry in the United States and the adequacy of supplies to meet all normal domestic demands, He showed that the lakes of Nebraska alone contained a known supply sufficient to last one hundred years, and that the California supplies were incalculably large.

On the subject of graphite the Joseph Dixon Crucible Company was represented by Mr. McNaughton, who appeared in behalf of tariff on finished crucibles and finished graphite products and in opposition to tariff on graphite or plumbago. The committee has already heard graphite extensively and a large volume of graphite information is on record. George A. Sharpe of Alabama appeared on behalf of graphite producers of the United States, particularly speaking for the Alabama producers.

On Saturday, February 12, Frank W. Griffin appeared in behalf of tungsten producers urging the tariff already passed by the House and favorably reported by the Senate Finance Committee. Monday, February 14, different members of the firms manufacturing ferro-manganese in Philadelphia appeared in behalf of a tariff on ferro-manganese, but asking that manganese ore remain on the free list. Charles W. Potts, of Deerwood, Minnesota, appeared in behalf of manganese production in Arkansas and manganiferous iron ore production in Minnesota. Mr. Potts said that the reserves of high grade ore in Arkansas were probably ten times what had been credited to the district by such government estimates as have been made so far and that the reserves of manganiferous iron ore were comparatively inexhaustible and only comparable in extent to the mammoth iron deposits of the same region.

A. J. Seligman, of the Butte and Superior Zinc Corporation, New York City, gave the committee an interesting account of the mammoth manganese operations in rhodochrosite. He said that his company had shipped already close to 200,000 tons of ore and that they could ship for many years at the rate of 1,000 tons a day. William J. Prowell, of Philadelphia, gave an account of his trips in the purchasing of mangagese which had taken him to every manganese district in the United States and expressed the opinion that our reserves offered extraordinary prospects for development into a permanent industry. He also spoke in behalf of a tariff on flurspar and stated that his company operated an enormous deposit in New Mexico from which shipments were being made to blast furnaces and which could continue to grow and develop under tariff protection.

A. G. Woodruff, of Garrisonville, Virginia, appeared in behalf of tariff on pyrites, and showed that the real competition to the pyrites industry was from the Reo Tinto and Huelva operations in Spain and not from domestic sulphur production, and that pyrites from Spain was imported into this country at the cost of ocean freight in order to furnish ships with a paying ballast on return from abroad.

The hearings before the Ways and Means Committee on administrative features occupied two days. There was discussed the particular effect of tariff on articles manufactured by child labor in view of our own child labor laws. It was suggested that an additional tariff be placed on articles so produced as such competitive conditions are not entirely covered by tariff. This would affect the production of all hand-sorted and hand-prepared minerals, such as tungsten, graphite, mica, etc.

Mr. Smith of the American Mining Congress appeared on February 16 to offer the suggestion that there be made available for compilation and distribution by the customs office to individual companies, trade organizations, trade journals and trade associations, such information as will give to the industries of this country the knowledge of whether or not its industry is being protected by the tariffs levied. It is especially desired that the customs office furnish daily a list of entries liquidated, giving in each instance the country of origin, the nature of the shipment and its classification for duty, omitting the name of the consignee and the consignor as a matter of fairness. It was also urged that the customs office be given an additional appropriation for this important work.

A. Cressy Morrison supported this position taken by the chief of the Mining Congress Tariff Division in an interesting statement in which he brought out the contrast between a protective tariff and a tariff for revenue only, in that, in a tariff for revenue only there are but two parties to the transaction, the government and the importer, but that in a protective tariff there are three parties to the transaction, the government, the importer and the domestic industry to be protected. For this reason he urged that public access be given to the classification of liquidated imports.

George W. Ashworth, chief of the division of customs, spoke on the administration activities of the customs department and urged a codification of custom laws.

Chairman Fordney stated that in the future administrative matters would be considered by small sub-committees, each of which would have a detailed problem in charge, but that the whole committee would consider every question involving schedules.

The Emergency Tariff Bill as passed by the Senate did not contain any amendments directly affecting the mining industry, the amendments proposed for lead, zinc and tungsten being finally omitted.

GOVERNOR PARKER REQUESTS AID OF U. S. BUREAU OF MINES

ACTUAL CONDITIONS in the natural gas fields of Louisiana will be made known to the law makers and the public of that state as a result of an investigation now being carried on there by the United States Bureau of Mines. Governor John M. Parker requested that the work be done and expenses will be borne by the state of Louisiana.

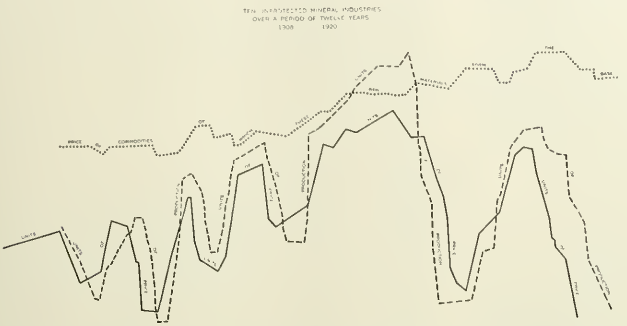
The press of Louisiana has of late carried items frequently calling for conservation of the state's natural gas resources. The usual character of comment, ranging from statements that the supply is nearing exhaustion to assertions that it will last forever, has been heard. Demands for the passage of laws prescribing methods of conservation have become insistent. It occurred to Governor Parker that the situation as it actually exists should be surveyed and outlined by disinterested scientists before the state legislature attempted to enact the necessary measures; hence the selection of the Bureau of Mines.

The investigation will be made by R. A. Cattell, petroleum engineer, who executed a commission for the Bureau of Mines at Muskogee a few years ago and later worked in foreign fields for the Pearson interests. Mr. Cattell will work under the direction of H. W. Bell, engineer in charge of the Bureau of Mines field office at Dallas, Texas. The investigation, which started in the Monroe field in northern Louisiana, will cover a period of several months.

EFFECT OF TARIFF ON PRICES IN THE MINERAL INDUSTRIES

THESE TWO CHARTS represent relative movements of price and production in two groups of mineral industries, protected and unprotected, and the comparative price movement of the industries which are dependent on these industries as their base of raw material supply.

These charts are composites of price and production movements, the ratios being computed in units of price, production, quantity and time peculiar to each industry in question, the ratios for the same period then being co-related.



It will be noted in the unprotected industries that as price falls, production falls with it until at the low point of the price there is a flat level of theoretical non-production, which in some industries is actual non-production and in others is a minimum of production. When this flat level of low production is continued for a long enough time, price immediately starts upward. Production is stimulated thereby until at the high point of price, which may represent profiteering to the producer; price is speedily overtopped by production; stimulated by these high prices, and there is great over-production. Price then starts rapidly down; production follows it until the low point of price is again reached; another flat level of non-production, when price starts back up and there is another big angle which represents excessive prices for the materials and large over-production, followed by rapid cut of price, diminution in production until another low point in the industry is reached, which represents bankruptcies for many operating companies, and a flat level of non-production which accelerates another upward price move.

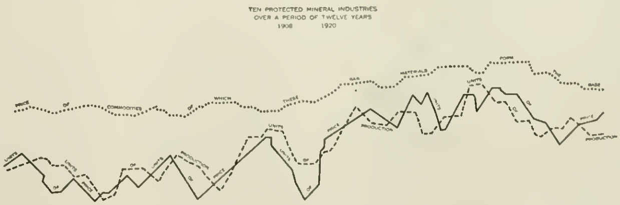
Under such circumstances the swing of prices is rapid and over a wide area. The important thing about this chart is that the price fixed by the manufacturer who uses any one of these raw materials as part of his finished product, is based not on the low price range nor on the intermediary price range, but on the top price range. The manufacturer must be prepared in the price of his finished product to meet a cost for his raw material represented by the possible high ranges of price. For example, in 1918 when the price of quicksilver, one of the metals from which this composite chart was made up, was at its peak of high price, about $100 per flask, the price of fulminate of mercury caps into which goes 65% of mercury produced, was $17.00 a thousand.

Today with the price of quicksilver at the low point on the chart and at the lowest point seen in years, $30.00 to $35.00 a flask, the price of fulminate of mercury caps is $17.00 a thousand.

This policy on the part of the manufacturer is due partly to the fact that advanced stages of manufacture cannot follow cuts in raw material with immediate accuracy, and partly justified by the fact that the manufacturer must be protected against the possible recurrence of high price in replacing his stocks of raw material. The cost, therefore, of the finished article to the ultimate consumer is based on the top range of cost of the raw material at the points of widest fluctuation.

The lower chart represents price and production movements in ten protected mineral industries over the same period of time. The continuous line represents production and the broken line price, as above. It will be noted that price and production in this chart follow the laws of supply and demand as in the upper chart, but with this vital difference: The industry being protected from extreme low ranges of price by tariff, the price does not drop to a point where there is widespread bankruptcy in the industry and where the price is below the cost of production. Therefore, production does not fall to the flat level of non-production shown in the unprotected mineral industries.

Similarly, as there is no flat level of non-production, there is no rapid stimulation of price which forces production up to a point of over-production. There is a price movement and a production movement in response to the laws of supply and demand, but over a range of differentials scarcely one-third as wide as in non-protected industries. Just as there are no low points, similarly there are no high points of profiteering, and the important thing to the consumer is that the cost of the raw material on which the manufacturer bases the cost of his finished product is at a much lower top range of probable price than is possible under the unprotected industries. Tariff, in short, has acted as a huge economic gyroscope in maintaining a smooth running-level in the price and production movement in the industry so protected.



That this applies to industries other than mineral is shown in the woolen industry. In 1912 a company in the middle west which operated its own woolen mills where it manufactured wool from entirely domestic sources into woolen cloth, and made this woolen cloth into clothing, this company made a high-class all-woolen suit of clothes which sold at wholesale as low as $8.00 per suit. It did this under a protected market for domestic wool. While a comparison with today's condition is somewhat distorted in view of the economic disturbances following the war, yet with wool on the free list today and the domestic wool lower than it has been for many years and begging a market at any price, this same woolen mill is not selling the same suit of all-wool clothes at $8.00 wholesale; it is selling the suit at from $18 to $20 wholesale. Why? Simply because the manufacturer has had his price raised by an extreme fluctuation in the cost of his raw material. He cannot follow this fluctuation down as rapidly as it occurs in the raw material because he must protect himself against the possibility of a wide upward swing in the cost of this same material, because the market for it is unprotected, and with bankruptcy in the industry, there is bound to be a flat level of non-production which will send prices shooting upward.

Vast Sums of Wealth Recovered From Junk Heaps and Metal Scraps

SECONDARY METALS—those recovered from scrap, sweepings, skimmings and drosses—of the value of $181,841,500 were recovered in the United States in 1919, the totals having just been published by the United States Geological Survey. This figure represents quite a decline from that of 1918, which was $264,298,900. Gold, silver, platinum, iron, steel and ferro-alloys are not included.

Gold and silver valued at $27,592,060 was remelted in 1919. Reports from mints and refineries indicated the recovery during the year of 6,463,002 fine ounces of silver and $19,354,398 in gold. Estimates of the quantity of ferrous scrap remelted during 1919 range from 7,500,000 tons to 8,500,000 tons. Platinum, iridium and palladium worth $8,053,265—or more than the value of platinum and allied metals imported for domestic consumption during the year—were also recovered.

About 287,190 short tons of secondary copper was recovered. Exports of scrap brass and copper fit only for remanufacture amounted to 661 tons of the former and 225 tons of the latter, while imports of scrap copper totalled 2,109 tons and those of scrap brass aggregated 7,933 tons. Of the recoveries of copper during the year, 48,087 tons of pig copper was produced by refineries of secondary materials, also 28,670 tons of copper in alloys other than brass and 174,790 tons of copper in remelted brass. As compared with 1918 there was a decrease of 18,200 tons of pig copper, 55,370 tons of copper in brass and 5,700 tons in alloys other than brass.

Secondary lead recovered aggregated 122,100 short tons, or 25,000 tons more than in 1918. Secondary zinc recoveries aggregated 108,404 tons, or 23.3 per cent of the year's output of primary zinc; antimony, all of which except forty-eight tons was recovered from alloys, 4,399 tons, as compared with 5,226 short tons in 1918; tin, 24,033 tons, valued at $29,868,200, as compared with 23,837 tons valued at $41,381,000 in 1918; aluminum, 18,691 short tons valued at $12,014,600, as compared with 15,050 tons in 1918 valued at $10,113,600; nickel, 2,447 tons as compared with 1,393 tons in 1918.

SOUTH'S MINERAL INDUSTRIES SEEK PROTECTION

THE SOUTH IS TURNING toward protection. The second Southern Tariff Congress, recently held in Atlanta, Ga., drew more than four-hundred business men from all parts of the historic home of free trade who adopted resolutions and sent telegrams to President-elect Harding and to Congress urging enactment of tariff measures adequate to protect American industries from foreign competition.

With the exception of the agricultural contingent, the delegation representing the mineral industry was the largest in attendance at the convention. Herbert Wilson Smith, chief of the Tariff Division of the American Mining Congress, served as chairman of the committee which considered mineral tariffs. This committee reported out the following resolution which was adopted unanimously by the convention:

Whereas the necessity and urgency of protection for American industry is now the paramount issue before the Congress of the United States; and

WHEREAS the mineral industry of this country is seriously jeopardized by the invasion of foreign minerals; and

WHEREAS a subcommittee of the Southern Tariff Congress was appointed on January 26, 1921, for the purpose of reporting upon the needs of the mineral industry for protection, and the said committee having reported that the following minerals, among others, are urgently in need of protection from foreign competition—antimony, asbestos, barytes, bauxite, gypsum, chromite, quicksilver, mica, molybdenum, pumice, pyrite and sulphur, potash, graphite, tungsten, flint, talc, manganese, magnesite, lead, clay (kaolin), feldspar, whiting, marble, zinc, monazite sand, ferro-alloys, thorium, iron and steel, fuller's earth; therefore, be it

Resolved by the Southern Tariff Congress, in joint session assembled, That it lends its unqualified endorsement to the protection now being sought by the mineral industries before the Ways and Means Committee of the Congress of the United States; and be it further

Resolved by the Southern Tariff Congress, in joint session, That the Congress express its unqualified approval of such protection on all such minerals as will equalize the cost of production here and abroad, and pledge itself to lend its best effort toward that end.

The telegram sent both to Congress and to President-elect Harding contained the following paragraphs:

"Due largely to foreign competition, all the Southern industries represented in this convention are in a desperate condition, including agriculture, livestock, mining, manufacturing and forest products. These industries are all essential to the prosperity of our country in peace and to its success in war. The producer has been encouraged to increase production in order to meet the world's demand for food, clothing and other products. He has done so at great cost. He is now unable to market his product at a living price or to obtain the credit to hold it for a better market. This condition will inevitably lessen future production and cause great hardship and sacrifice.

"We are for the full employment and a living wage for the wage earner, a living price for products of the farm, the mine and the factory. We believe that it is essential for the assurance of prosperity to have an adequate tariff that will protect the product and industry of our people against foreign competition. In the long run this will mean cheaper cost of living to the consumer as well as greater buying power."

Four members of the American Mining Congress participated in the sessions of the Congress, and one of them, George A. Sharpe of Alabama, was elected permanent head of the Minerals Section. The others were Colonel Joel Hurt and George L. Pratt, of Atlanta, and A. B. Conklin, of Alabama.

METALS PAY LARGEST PROPORTION OF U.S. INCOME TAXES

MANUFACTURERS of metal and metal products paid a larger amount in federal taxes in 1918 than any class of corporations, and agriculture and related industries paid the least. Figures for 1918, the latest year for which comparative tables are available, have just been announced by the Commissioner of Internal Revenue.

Of the total taxes contributed to the government's upkeep by all corporations, manufacturing paid the most, $2,112,044,810, or 66-86 per cent. Of this amount manufacturers of metal and metal products paid $1,003,031,267, or 31.76 per cent of the total paid by all corporations. This was the largest amount paid by any single sub-unit of industry.

The metal and metal products manufacturing group leads all others not only in the amount of net income returned, but likewise in the lowest cost of operation reported. Fifteen per cent of its gross income remained after all deductions had been accounted for. The nearest approach to this record was made by mining and quarrying concerns, with 12.42 per cent.

Agriculture and related industries contributed only $12,741,714 in corporation income taxes, or .4 per cent of the total.

A total of 202,061 corporations reported net taxable income during the year. Of this number, 5,524 came within the strict classification of mining and quarrying concerns (embracing producers merely and not including manufacturers or jobbers of mine products). The gross income of these concerns was $3,597,203,674, with total deductions of $3,029,426,465. Of the deductions, 11.07 per cent was for exhaustion, amortization and depletion. The net taxable income of these concerns was $567,777,209 and the amount of tax paid was $191,364,377. This amount, which included income, war profits and excess profits taxes, was 6.06 per cent of all the taxes paid by all corporations. This tax was distributed among the various branches of the mining industry as follows:

Iron	$1,747,314	Salt	$1,261,078
Copper	9,871,937	All other non-metal mining	3,441,081
Lead and zinc	9,864,903	Miscellaneous mining	13,059,512
Precious metals	2,210,967	Quarrying	2,018,905
All other metal mining	9,866,983	Mining and quarrying-combinations	1,140,672
Coal	76,961,211		
Oil	58,840,626		
Gas	1,079,188		

Forty-eight per cent of companies engaged in mining and quarrying reported no taxable net income. Instead, they reported deficits which totalled $71,473,129.

PAYNE TELLS HOW HE DISPOSED OF WAR MINERALS CLAIMS

IN COMPLIANCE with a resolution introduced early in February by Senator Robinson of Arkansas, Secretary of the Interior Payne sent to the Senate a list of all claimants for relief under the War Minerals Act, with notations of action taken, and with a digest of constructions placed upon the act by the Secretary and the Solicitor of the Department of Interior, the Attorney General and the Comptroller of the Treasury.

The report summarized shows the following: Claims filed, 1,207, aggregating $18,131,493; awards, $2,457,259; amount involved in claims in which awards were made, $7,871,315; amount involved in claims pending, $3,106,697; amount involved in claims withdrawn, $646,577. Claims totaling $6,506.903 were disallowed for the following reasons: No government request, $3,464,023; failed to file questionnaire, $90,338; excluding purchase of property, no loss shown, $199,973; purchase price of property, $275,216; loss on account of negotiations to purchase, $18,564; prospecting under option $3,005; research work, $12,990; expenditures prior to request, $7,506; not of commercial importance, $541,927; no loss shown, $893,197; loss not due to government request, $30,661; money loaned to produce, $6,969; not covered by Act, $909,976; promotion expense, $3,753; contract prior to request, $37,326; ore buying, $7,600; purchase of lease, $2,681; not substantiated $1,192.

DETECTIVE AGENCY CHARGED WITH PROMOTING LABOR STRIFE

EMPLOYERS ARE BEING BLED by a "super-private detective agency" which is responsible for seventy-five per cent of the strikes by machinists' organizations during the last two years, according to charges made by E. C. Davison, secretary of the International Association of Machinists, in an address delivered in Washington. Mr. Davison said the agency made a specialty of stirring up industrial troubles and then securing large sums from employers to settle the disturbances.

A strike of machinists in Akron, Ohio, in 1919, he said, was engineered by fourteen operatives of a private agency who worked their way into the union's ranks. Eight of the fourteen were subsequently shown to have been members of the I. W. W. In many respects the situation at Akron was duplicated at Norfolk, where there was another machinists' strike the same year.

The controversy during the war between Bridgeport, Connecticut, munitions workers and their employers was caused, Mr. Davison said, by these "parasites who make capital out of the disputes between capital and labor." In this particular instance, a charter of a machinists' union with three-thousand members was revoked.

An investigation conducted in New York resulted in the discovery that 107 persons in the employ of the agency were enrolled in the ranks of organized labor, Mr. Davison asserted. The American Federation of Labor, he said, has found it necessary to employ detectives of its own to work themselves into the employ of the "super" detective agency, and thus to detect what the "detectives" were doing. Some of the agency's operatives, posing as labor men, are known to labor leaders.

The method of the "supers," as outlined by Mr. Davison is to first get into a union and work the real workmen into a frenzy over some real or fancied wrong. Then another agent approaches the employer and sells his "confidential" information that the men are about to strike, together with "confidential" reports of the union which really are not confidential at all. A third representative then calls upon the employer and offers his services as mediator, not forgetting to make it plain that it "will cost considerable money." Sometimes they get the money and call off the contemplated strike; sometimes the employer refuses and a strike actually results.

Mr. Davison said that many employers in different parts of the country, when informed by his organization what the "super" detective agency was doing, admitted that they had themselves been its victims.

SURVEYOR GENERAL OFFICES MAY BE ABOLISHED

IF AN IDEA advanced by Representative Sisson of Mississippi and approved by Commissioner Clay Tallman is enacted into law, the offices of surveyors general in thirteen states will be abolished. The House Committee on Appropriations requested Commissioner Tallman to give its members his ideas on the subject. No further action will be taken at this session of Congress, but some disposition of the matter is one of the probabilities of the special session which will convene early next month.

The work of the General Land Office which would be affected by this change is now done by the thirteen surveyors general and the field survey organization. If the change is made there will still be some form of supervision at Denver, but all of the work will be consolidated in the General Land Office at Washington.

Commissioner Tallman explained to the Appropriations committee that the making of surveys on mining claims was supervised by deputy mineral surveyors appointed by the surveyors general. Persons desiring mineral surveys apply to a surveyor general, naming the deputy whom they desire to do the work, and the surveyor general orders the deputy to make such survey, and report to him. The deputy is paid by the party for whom the survey is made under contract. The applicant for survey makes a deposit with the surveyor general for payment of the cost of office work in the surveyor general's office. Official plat and field notes are made of the survey, copy of which is given to the applicant which he uses as a basis for application for patent in the Land Office. At present 115 employes are on duty at offices of the surveyors general.

There are in the General Land Office duplicates of field notes and plats of public land surveys which are on file in the surveyor general offices, although in the absence of an entry of the land surveyed the Land Office would not receive copy of field notes and plats of a mineral survey. Under the proposed consolidation at Washington, Commissioner Tallman said it would be necessary to maintain in each state a field survey station whose reports would be sent to Washington instead of to the surveyors general, the official field notes to remain in the local field surveying organization. Instructions for each survey would also be issued from Washington to the field surveying organization and it would not be necessary to remove official field notes and plats now in offices of the surveyors general, where they are now kept for reference by the field surveying section and for the information of the public. Mineral surveyors might be appointed by the land commissioner, Mr. Tallman said instead of by the surveyors general with the commissioner's approval. Applications for mineral surveys would be made direct to Washington and each order for survey issued to the deputy who would make his report to Washington.

The commissioner proposed a supervisor of surveys at Denver. Consolidation of the surveyor general offices in one office would save expense and correspondence, would consolidate functions and develop a single standard of efficiency. The only disadvantage would be the abolition of the more localized sources of public information, principally in the case of mineral surveys within the state, but the commissioner said this matter could be handled so as to obviate, if not eliminate, this opposition by leaving these offices with their permanent records of which the General Land Office has duplicates, in charge of an assistant supervisor of surveys. The present law provides that the official field notes and plats of the surveyors general shall be turned over to the states when the surveying work in such states is completed.

Commissioner Tallman submitted a proposed bill to carry out the consolidation, providing for its taking effect June 30, 1921.

If the plan is put into effect, offices of surveyors general in Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, South Dakota, Utah, Washington, Wyoming, and Alaska will be abolished.

The bill provides for sending to Washington records and such clerical forces in the surveyor general offices as may be needed in the General Land Office, appropriating \$220,000 for expenses.

Last year it cost \$221,465 to maintain these offices and the estimate for next year was increased \$34,850.

The bill also proposed the establishment of the independent office of the Secretary of Alaska.

The commissioner estimated the consolidation would save \$36,315 for the fiscal year 1922 and an additional sum beginning in 1923.

The commissioner said the objections usually raised to consolidation were that it would constitute undue and unnecessary centralization of authority, that the cost of doing the work in Washington would be greater than in the field offices and would result in greater delays in handling the work, that the public directly affected would be deprived of the use of local offices in securing information and that general development in public land states would be impaired and delayed. He held that these objections were not well founded, and said he believed consolidation would result in greater efficiency and economy, although he made it clear that he was not urging abolition of the offices but simply giving his opinion as requested.

LACK OF OIL GAUGERS HURTS LESSEES AND GOVERNMENT

FOURTEEN MILLION BARRELS of oil, upon which the government will receive \$6,000,000 royalty, will be produced annually under the leasing law on known producing fields, according to a statement made by Dr. E. A. Holbrook, assistant director of the Bureau of Mines, before the House Committee on Appropriations. Dr. Holbrook appeared in behalf of an appropriation of funds for enforcing the leasing law..

Dr. Holbrook stated that the Shipping Board had been put to great inconvenience, and in some instances had failed to secure the oil it needed, because the Bureau was unable to gauge oil produced by sellers operating under the leasing law. In one instance it was impossible for a refining company to fill a contract for 1,000 barrels per day and impossible for the Shipping Board to receive the oil involved because the oil had not been gauged. The Bureau, Dr. Holbrook said, was unable to gauge the oil because of lack of funds for employing a sufficient number of supervisors. Oil companies had begun to complain that they were suffering serious losses.

Twenty-five men would be the proper number to supervise operations, from the beginning to measuring and delivering to pipe-lines and computing royalties, according to Dr. Holbrook. These agents will be located at Casper, Wyoming, Denver, Colorado, and Shreveport, La. The California State Mining Bureau would take care of operations in that state, and the Wyoming supervisor would look after the work in Montana, until production became larger in these two states.

Even the government is in a sense suffering from conditions which prevail. Dr. Holbrook pointed out that oil companies have offered \$9,300,000 in back royalties in exchange for leases, but that the offer could not be accepted until the royalties are properly checked.

COLORADO'S FELDSPAR-MICA FIELDS TO BE DEVELOPED

GEORGE J. BANCROFT of Denver, while in the office of the American Mining Congress, Washington, during the tariff hearings, stated he intended to enlarge activities at his Denver plant, which employed twelve men in feldspar-mica work during the war.

Before coming to Washington Mr. Bancroft visited the mica fields near Asheville and Spruce Pine, N. C., where there are also modern mills. He reported that the quality of mica in these fields was excellent, but felt that the Colorado deposits were decidedly larger. He said that Colorado also has an advantage in freight rates.

He is chiefly interested in securing a tariff to protect the American mica industry against Indian competition. Indian workmen, who are among the most experienced and efficient in the world and are paid high wages as Indian wages generally run, receive thirty cents a day, whereas in Colorado wages for the same character of work average ten times as much. Furthermore, considerable training of workmen will be necessary.

LIME PRODUCTION IN 1920

ABOUT 3,350,000 short tons of lime, valued at $33,518,000, was produced and sold in the United States, Porto Rico and Hawaii in 1920, according to Geological Survey estimates. Output was nine per cent greater than 1919 and also larger than 1918 but not quite equal to that of pre-war years. Its value was considerably in excess of that of any previous year, the average being $10 per ton as compared with $9.50 in 1919 and $8.36 in 1918. Production figures for the last two years follow:

Lime produced in the United States in 1919 and 1920
[Estimate for 1920; final figures in part for 1919]

	1919	1920		Increase or decrease in quantity, 1920
	Total lime (short tons)	Total lime (short tons)	Average value per ton	Total lime (per cent)
Pennsylvania	747,056	738,000	$8.88	— 1
Ohio......	506,000	570,000	10.32	+13
Virginia..	224,385	256,700	8.05	+14
Missouri...	181,000	211,100	10.08	+17
Wisconsin. .	123,759	161,000	10.32	+30
West Virginia	141,000	141,000	9.29	....
Indiana......	105,952	139,800	10.21	+32
Massachusetts.	124,000	126,900	10.94	+ 2
Michigan...	124,700	144,000	10.28	+15
Maine...... ..	94,000	104,400	16.00	+11
Tennessee	116,970	101,000	7.99	—14
Illinois....	64,164	94,400	9.90	+47
Maryland..	99,717	94,000	7.00	— 6
New York	79,528	81,930	12.20	+ 3
Texas.. ..	51,205	55,900	10.10	+ 9
Connecticut	(*a*)	(*a*)	11.00	+ 6
Alabama...	48,600	51,300	10.00	+ 6
Vermont....	38,150	47,100	10.68	+23
California...	39,000	40,000	12.30	+ 3
Washington	21,236	26,330	22.16	+24
Undistributed	142,703	165,140	.....	+16
	3,073,125	3,350,000	10.00	+ 9

(a) Included in "Undistributed."

Butte's Claims for Experiment Station Outlined to Senate

SENATOR WALSH of Montana has been making a personal effort to induce Congress to include in the Sundry Civil Bill an item of $25,000 for the establishment of an experiment station of the Bureau of Mines at Butte. The House did not include the item in the bill, but the Senate did, and when the measure went to conference this provision was contained therein.

Mining rather than metallurgical problems will be handled at the Butte station in case it is established. The director of the Bureau of Mines recently stated that there was no place in the world where mining problems could be studied to better advantage. During discussion of the appropriation Senator Walsh submitted to the Senate a written statement explaining the necessity for the proposed Butte station and outlining the particular characteristics of the work there which would differentiate its investigations from those carried on by other stations.

At many experiment stations of the Bureau of Mines, Senator Walsh said, attention is given primarily to metallurgical treatment of ores, including devising of new methods of treatment, with the object of evolving processes which make the treatment of complex and low grade ores a paying proposition. Such work as is done at the other stations could also be done at Butte, but the most important work would consist of the investigation of purely mining problems such as those arising out of ventilation, fires, dust, drilling, and handling of explosives.

"The greatest mining camp in the United States, and perhaps in the world, the city of Butte, has until now been neglected," Senator Walsh said to the Senate. "From an area there, the radius of which does not exceed one mile, one-fifth of the world's production of copper comes. The same region is fast becoming exceedingly important in the production of zinc, and the state of Montana leads in the production of silver, a by-product of the copper ores of that district."

Senator Walsh said also that there was perhaps no mining camp in the country where as much money had been spent on mechanical appliances as had been spent at Butte. The companies there have spent thousands of dollars on safety appliances both for underground and surface use. Many of them are experimenting with methods of handling labor and with fire prevention measures. These companies will cooperate with the Bureau of Mines if a station is established in Butte, and it is the opinion both of Senator Walsh and of the director of the Bureau of Mines that a station there will be one of the most useful in the United States.

GLACIER NATIONAL PARK HIGHWAY

THE NATIONAL PARK SERVICE has submitted to Congress estimates for the construction of a road crossing the Continental Divide and connecting the east and west sides of Glacier National Park. The project calls for a dirt road seventeen feet wide with maximum grades of eight per cent, easy curves and rustic log bridges. Its length will be 39.275 miles and the cost $563,000. The road will complete the one missing link in the National Park-to park Highway and will be one of the most spectacular and scenic highways in America.

The National Park Service has let a contract for construction of a suspension bridge across the Colorado River in Grand Canyon National Park, Arizona. The bridge will be five feet wide with guard rails of heavy mesh wire. The floor will be suspended from the main cables by three-eights inch steel wire ropes six feet apart, attached to floor beams by three-eighths inch steel stirrup rods three feet apart.

WORLD MARKET CONDITIONS SUMMARIZED BY COAL EXPORT COMMITTEE

IN MAY 1920, at the request of the Bureau of Foreign and Domestic Commerce, the Coal Export Committee on the American Mining Congress, of which Dr. Henry Mace Payne of New York is chairman, prepared a questionnaire for submission by the bureau to the various United States consular offices in foreign countries. This questionnaire was first sent to the principal companies in America interested in the export of coal, in order to secure from them suggestions regarding information essential to the coal trade. The bureau then transmitted these questions abroad and to date sixteen replies have been received. The questionnaire and summarized replies are as follows:

1. *What are the Relative Proportions of Steam and Gas Coal Used?*

Mexico, steam exclusively; Belgium, Belgian production is 10 percent gas coal, 26 percent coke and forge coal, 43 percent "open burning" (low volatile) coal, 21 percent slow burning anthracite. It is therefore necessary to import considerable quantities of gas coal; Switzerland, gas exclusively; Denmark, gas 30 percent, steam 70 percent; Netherlands, 10 percent gas, 65 steam, 25 percent anthracite and briquettes; Turkey, 15 percent gas, 85 percent steam; Czecho-Slovakia, lump gas preferred; Warsaw-Poland, 3 percent gas, 97 percent steam; Spain, 30 percent gas, 70 percent steam; Italy, 25 percent gas, 75 percent steam; Peru, 80 percent gas, 20 percent steam in the city of Lima, 50-50 for Peru; Australia, imports no coal, is developing an export trade; Africa, supplies its own needs and does some exporting; Norway, 20 percent gas, 80 percent steam; Finland, gas used to small amount in railroad shops. Three municipal gas plants. Abo, Helsingfors and Viborg. Wood the principal fuel.

2. *Is Mine Run or Screened Lump Preferred for Steam Purposes?*

Mexico, run of mine; Belgium, Switzerland, Spain, Italy, Peru, Netherlands and Czecho-Slovakia, screened; Denmark, screened for the state railways, no choice for steam or gas purposes; Turkey, screened lump exclusively; Warsaw-Poland, railroads use lump. Industrial plants use $\frac{3}{4}$-inch slack or pea; Norway, screened preferred but much run of mine used; Finland, see Question No. 1.

3. *What Proportion of Plants Using Steam Coal Have Stoker Grates?*

Mexico, all hand firing; Belgium, twenty large plants in Belgium have stoker grates. Special adjustment is required for burning Belgian coal which requires a very thin bed. Also the sulphur in Belgian coal is so high that standard grate bars have been known to fuse within 48 hours. A mixture of hematite and ferrochrome is necessary to withstand this action; Switzerland, most large plants use automatic stokers; Denmark, 10 percent of the plants, consuming 40 percent of the total fuel used for steam purposes; Netherlands, $12\frac{1}{2}$ percent; Turkey, Finland, Peru, none; Czecho-Slovakia, Norway, Spain, a few; Warsaw-Poland, 75 percent of steam coal consumers, except railways; Italy, 10 percent of the steam plants representing 10 percent of the boiler area.

4. *Are These Parties Buying Coarser Coal and Crushing It, Or Using Slack Coal?*

Belgium, Netherlands, Warsaw-Poland, Finland, slack; Switzerland, nut coal up to 30 mm.; Denmark, crushers are used; Czecho-Slovakia, lumps are hand crushed; Norway, run of mine used.

5. *How Many of the Plants Visited Have, Or Have Not, A Smoke Ordinance?*

Belgium, no specific ordinance, but each plant is liable for specific damages. Locomotives are provided with smoke consumers; Switzerland, a few; Denmark, plants are ordinarily located away from centers of population, but where necessary smoke consumers are installed; Netherlands, smoke ordinances pending as the result of government investigation into excess amount of carbon in smoke; Turkey, Czecho-Slovakia, Warsaw-Poland, Mexico, Norway, Finland, Peru, none; Spain, ordinances exist but are not enforced; Italy, a few cities have smoke ordinances

6. *Do the Railroads Use a High or Low Volatile Coal?*

Mexco, any kind; Belgium, 47 percent of railroad fuel is low volatile coal and briquettes. The balance is high volatile. This matter is regulated by the Belgian Railroad Administration according to the district in operation; Switzerland, high volatile; Denmark, high volatile; China, any kind; Netherlands, $\frac{1}{3}$ high volatile, $\frac{2}{3}$ low volatile, lignites, or briquettes; Turkey, high volatile when it can be obtained; Czecho-Slovakia, any kind, account of poor storage facilities; Warsaw-Poland, both; Spain, low volatile not exceeding 20 percent, ash below 8 percent, B. T. U. in excess of 14,400; Italy, low volatile; Peru, high volatile, or briquettes exceeding 14,500 B. T. U.; Africa, any kind, including briquettes; Norway, high volatile; Finland, wood exclusively.

7. *Are Storage Facilities Such, in General, That a Sufficient Quantity Can Be Received During the Summer Months and Safely Stored Without Danger of Fire for the Balance of the Year?*

Mexico, yes, but where storage is required petroleum is favored; Belgium, no. Shortness of haul and diversified distribution have rendered storage unnecessary; Denmark, state railways, no gas plants 3 months, power plants 6 months; Turkey, no. There are only five coal depots, none of which has a capacity exceeding 10,000 tons; Spain, no. Shipments must come regularly throughout the year; Italy, yes. The storage of British coal has been very satisfactory. American coal when received in a damp condition gives trouble; Norway, yes, for six months during the winter; Switzerland, Netherlands, Africa, Peru, yes; China, Czecho-Slovakia. Warsaw-Poland, no.

8. *Is the United States a Normal Source of Supply, or Will the Demand for American Coal Become Less and Less? If the Latter, How Long will the Present Demand Continue?*

Mexico, in 1913, the toal consumption of American coal was 365,000 tons; in 1919 106,137 tons. Due to the development of the petroleum industry and unsatisfactory tranportation, it will probably become less; Belgium, Belgium normally receives 68 per cent of her imported coal from Germany, 29 percent from Great Britain and 3 percent from the United States. Present exchange rates practically close the Belgian market to American coal; Switzerland, yes, indefinitely, providing the quality of American shipments is maintained; Denmark, until June, 1919, no coal except from Great Britain and Germany was imported. Since that date, American coal has been increasingly in demand, and it is probable will continue so, providing the integrity of American coal exporters is established and maintained; China, no; none has been imported since 1918; Netherlands, the United States has not previously been a normal source, but it is stated that if prices and quality can compete with British coal, America can maintain a permanent footing; Turkey, before the war, Cardiff coal was principally used. Small quantities of German, Belgian and Russian coal were imported. Within the past two years Pocahontas coal has been introduced and has been highly satisfactory. If satisfactory competition can be maintained, even after England lifts the embargo on coal the demand for American coal will continue and increase, as Turkish coal although low in volatile matter is excessively high in sulphur; Czecho-Slovakia-unusual difficulties militate against coal importation, as Czecho-Slovakia has no adequate seaports and storage facilities are limited. A great diversity of return cargoes, however, is available from river ports to the sea. A coal council has been created to cooperate with the University of Public Works in the regulation of distribution, price fixing, etc. There are local mines, which also produce a limited amount of sub-bituminous coal and also of lignite; Warsaw-Poland, no; Spain, until 1916 no material quantity of American coal was imported into Spain. In 1917 Pocahontas coal was successfully introduced and would meet with a ready market if c. i. f. prices could be quoted under 185 pesetas (Aug., 1920); Italy, prior to the war, 90 percent of the coal imported was from Great Britain, the balance from Central Europe. In May, 1920, importations of American coal exceeded those from Great Britain. During the past six months receipts of American coal declined due (1) to embargoes in the United States which prohibited the filling of contracts and (2) the progressive cheapening of the lire. If British production increases and the exchange rate continues at the present unfavorable figure, the situation will rapidly revert to that of ante-bellum times; Peru, all the gas coal now comes from Australia, steam coal from the United States. Australian gas coal has been in demand, although costing $6 per ton more than American coal, because of the long established trade and because it is exceedingly hard and lumpy. There is no reason why American gas coal should not meet with favor if properly introduced; Norway, no. Great Britain by virtue of cheap freight rates is the normal source of supply. Any possibilities for American coal will depend on the future production and price of English coal; Finland, no.

9. *In the Municipal and Similar Gas Plants, is There any Legal Restriction on the Amount of H_2S in the Gas Per 1000 Cubic Feet?*

Mexico, petroleum and charcoal are used; Belgium, the limit is such that the H_2S must not color paper impregnated with 1 percent solution of acetate of lead; Switzerland, 2.5 percent sulphur in coal; China, yes, in Shanghai; Italy, gas must be free from H_2S in so far as the accepted industrial methods of purification will permit; Peru, there are no gas plants; Norway, Denmark, Netherlands, Turkey, Czecho-Slovakia, Finland, Warsaw-Poland, Spain, no.

10. *Are the Purifying Boxes Ample, or Restricted?*

Mexico, none used; Czecho-Slovakia, restricted; Warsaw-Poland, Belgium, Switzerland, Denmark, Netherlands, Spain, ample; Italy, boxes are based on a rate of 5 to 7 mm. per second for passage of gas, with coal containing not to exceed 1 percent sulphur. Norway, restricted. Finland, ample. At Helsingfors there are three boxes of 64 square meters with the purifying layer 1 meter thick.

11. *What is the Maximum Percentage of Sulphur in Coal these Plants Can Use in Emergency?*

Mexico, no official limit, usual practice; Belgium, have been compelled to use as high as 6 percent. Belgian coal being normally high in sulphur, ample provision is made for purification; Switzerland, 2.5 percent; Denmark, 2.5 percent; Netherlands, no limit, similar to Belgium; Turkey, Turkish coal contains so much sulphur that plants have to be specially constructed; Warsaw-Poland, 4 percent; Spain, the only limit on coal laid down by the Madrid gas plant is that volatile matter shall not be less than 30 percent and ash not more than 18 percent; Italy, 3 percent; Norway, 2.5 percent; Finland, sulphur content of gas must not exceed 2 grams per cubic meter.

12. *What Type Retorts are Used:—Horizontal? Vertical? Inclined?*

Belgium, principally horizontal; a few inclined; Switzerland, all three; Denmark, horizontal, the Copenhagen Municipal Gas Works are planning to build vertical retorts; Netherlands, all three; Czecho-Slovakia, Norway, horizontal; Warsaw-Poland, vertical; Spain, the older retorts are vertical; Italy, the older plants have horizontal retorts. Newer ones are inclined, while the latest equipment is vertical; Finland, vertical at Helsingfors, horizontal at Abo and Viborg.

13. *Are They Hand Charged or Mechanical?*

Belgium, Denmark, Warsaw-Poland, Italy, Finland, mechanical; Czecho-Slovakia, Spain, Mexico, hand; Norway, Netherlands, Switzerland, both;.

14. *What is the Average Yield of Gas per Lb. of Coal?*

Belgium, at present, 230-285 cubic meters per ton. Prior to the war 400 cubic meters. From 70-100 litres of ammonia and 55-90 litres of tar as residue; Switzerland, 330-360 cubic meters from 1 ton of coal; Denmark, 5 cubic feet of gas per lb.; Netherlands, 5-5.6 cubic feet per lb.; Czecho-Slovakia, from sub-bituminous coal 8,830-9,890 cubic feet per ton. From lignite 9,890-11,650 cubic feet per ton; Warsaw-Poland, 430 cubic meters per ton of coal; Spain, 300 cubic meters per metric ton. Water gas has never been tried in Spain; Italy, 250-300 cubic meters per ton; Norway, 360-400 cubic meters per ton; Finland, 300-320 cubic meters per ton. At present 30 retorts are operated on coal and 70 retorts on birch wood, the temperature of the retort is only about 1,200-1,400° C., so the yield is less.

15. *Is the Manufacture and Sale of By-Products, Coke, etc., an Essential Item?*

Mexico, Finland, no; Belgium, yes, especially coke and coal tar products, Switzerland, yes, principally coke; Denmark, yes, except that tar is disregarded; China, in the Kailan Mining Administration, yes; Netherlands, yes; Turkey, only for coke; Norway, Czecho-Slovakia, yes, for coke and tar; Warsaw-Poland, yes for tar and ammonia; Spain, yes, for all by-products; Italy, yes, entire cost of overhead and of production are met from by-products.

16. *Is the Fusing Point of Ash Considered in Selection of Coal?*

Mexico, China, Turkey, Czecho-Slovakia, Warsaw-Poland, Spain, Italy, Finland, no; Belgium, Switzerland, Denmark, Netherlands, Norway, yes.

17. *Does the Consumer Usually Purchase Coal Direct, or Through Importing Firms or Agencies?*

Mexico, only the large mining companies who buy direct; Belgium, through brokers who arrange long terms of credit for the consumer; Switzerland, through the official purchasing agency in New York; Denmark, large consumers direct; small ones through agencies; Netherlands, Turkey, through importing firms; Czecho-Slovakia, China, direct; Warsaw-Poland, through state coal offices; Spain, railroads, gas plants and steel works buy direct, smaller consumers through importers; Italy, through the Royal Italian Commission in New York and also through direct representations of American Exporters who have gone to Italy. Purchases for private account are made through importing firms or agencies of American companies. ;Peru, through importing houses, except that steamship companies buy direct; Norway, before the war through local agents. Recently from representations of American exporters; Finland, through importing agencies.

18. *Under the Present Existing Rates of Exchange, Does the Consumer Usually Have to Finance his Coal Supply Individually, or is Coal Purchased Collectively, Upon an Established Collective Credit?*

Belgium, co-operative associations; Switzerland, handled by the government; Netherlands, handled by the government on individual credits; Turkey, irregular; 10-15 days credit is usual; Warsaw-Poland, handled by the government; Czecho-Slovakia, Spain, Mexico, Italy, Demnark, Peru, China, individually; Norway, individually. Efforts now being made to establish collective buying; Finland, irregular.

19. *What are the Terminal Conditions, and are Ships Unloaded for a Year with Low Average Demurrage at the Port?*

Mexico, 400 tons per day at Vera Cruz, Salina Cruz, and Puerto, Mexico; Belgium, no congestion at Ghent or Antwerp. Unloading at Antwerp is by electric or hydraulic crane or by floating crane. No car shortage. Arrangements may be made for permanent moorings, quays, etc., at reduced rates. Labor is more efficient than at any other northern port; Switzerland, most of the coal is shipped to Antwerp, Rotterdam or Genoa; occasionally to Cette or Dunkirk; thence by barge up the Rhine, or by rail; Denmark, automatic cranes and appliances, in Copenhagen. At Aarhus, Aalborg, Korsor, etc., 500-700 tons per day; China, see Trade Commissioner Whitham's reports; Netherlands, ships unloading at Amsterdam and Rotterdam usually earn despatch money. Demurrage practically unknown;Turkey, demurrage rates at Constantinople are very high. The port is always congested. Cargo boats must be unloaded into lighters. Lighterage, labor and spillage are very expensive; Czecho-Slovakia, discharge facilities are inadequate. Low water at times makes discharge impossible; Warsaw-Poland, Poland's facilities are through Danzig and are therefore limited; Spain, 400 tons per day; Italy, Genoa has been continuously overtaxed for 5 years on account of large quantities of Swiss goods passing through the port. The ports of Spezia, Leghorn and Naples on the west coast are recommended for diversion, although they increase the rail haul. The new port of Savona is being developed to relieve Genoa. The newly acquired port of Trieste is splendidly equipped with electric cranes, docks, warehouses, etc.; Peru, discharge is difficult except at Callao. Demurrage charges are about average for the west coast; Norway, well equipped. Ordinarily no demurrage; Finland, poor, but demurrage rates low.

20. *What are the Prospects for Handling Return Cargo and if any Available of What Nature?*

Mexico, good; Belgium, plate glass, glassware, textiles, gloves, artificial silk, chemicals, and dyes, sugars and chicory, copper, ivory, copal, Finnish and Scandinavian lumber, rails, ingots, blooms, Thomas slag; Denmark, would be necessary to go on to Baltic ports for iron ore, timber, wood pulp, stone, etc., to England and France, and there obtain cargoes for United States. Occasionally a cargo of Danish flint, pebbles or chalk is shipped to the United States; China, ample cargo available but no demand in United States for Chinese products; Netherlands, good for handling German exports; Turkey, return cargoes from Constantinople, and the Black Sea ports are always available such as wool, hides, gum, opium, poppy seed and tobacco; Czecho-Slovakia, lumber, magnesite, Gablonz goods, glass, china, porcelains, sugar, malt, hops, bent wood furniture, machinery, paper, gloves, sodium cyanide, dyes, colors and cotton goods. Discharge facilities are inadequate; Warsaw-Poland, fair; Spain, great scarcity. As a result, pyrites from Huelva are transported to Baltimore at 50 percent the rate to Great Britain; Italy, practically nothing but Italian marble on which freight rates are low and much time consumed in loading; Peru, large quantities of sugar, cotton, ores and native products. No difficulty in securing cargoes if sailing dates are advertised; Norway, good. Iron ore, paving stone, salt petre, canned fish, fish meal, timber, paper, paper pulp. Many ships also carry cargoes to other European ports and then reload for the United States; Finland, freights from Finland are so low that it is usually cheaper for vessesl to return without cargo than to delay for loading Finnish lumber.

21. *Has British Coal ever Controlled your Fuel Market, and if so what Percentage of British Coal is being Used Now; Also What Percentage of American Coal was Used When Britain had Available Supply?*

Mexico: Germany, 9,594 tons, Australia, 26,801 tons; Canada, 2,999 tons; United States, 364,536 tons; Great Britain, 31,978 tons; Japan, 14,620 tons. Between 1900 and 1910 all British coal was manufactured into briquettes and used on British owned railroads. Belgium, See Question No. 8. Switzerland, before the war English coal in Switzerland was exceptional. Now England supplies 25 percent and the United States 50 percent; Denmark, England 50 percent, United States, 50 percent; China, no; Netherlands, in 1914: Germany 83 percent, Great Britain 1.5 percent, Belgium 1.4 percent, United States 14.1 percent. In 1920 the United States supplied about 50 percent; Turkey, British coal controlled the market until the war. Due to the British embargo only American coal is being imported at present; Warsaw-Poland, small quantities of British coal has been imported through Danzig and Riga; Spain, British coal normally dominated the Spanish market. At present American coal is rapidly supplanting it; Italy, see Question No. 8; Peru, before 1914 all coal came from Great Britain. Since that time coal from the United States has been the principal supply until 1920, when Australian coal entered into competition; Norway, until the middle of 1919 Norway's coal came principally from Great Britain, with small quantities from Spitzbergen. On account of the high cost of English coal, during the last half of 1919 and all of 1920 imports from the United States have exceeded those from England; Finland, British coal has always dominated the market, although during recent years the railways purchased 50 percent of their coal from German Westphalia.

22. *What are the Discharging Facilities at Unloading Ports?*

Mexico, see Question 19 (Mexico); Belgium, Antwerp, 500,000 tons per month, Ghent 250,000 tons per month. If the Antwerp port authorities brought back the floating derricks rented out by them in Ghent and Rotterdam, their capacity would be 1,000,000 tons per month. The most practical method of selling American coal in Belgium would be to organize a sales office at Antwerp with a large yard on the river front where boats could be unloaded; Switzerland, 700-1,000 tons per day; Denmark, normal discharge; China, see Trade Commissioner Whitman's reports; Netherlands, equal to all demands; Turkey, lighterage facilities are controlled by the Levant Stevedoring Company, a combination of six shipping agents representing the principal British lines. Prices for lighterage alone range from Ltq. 10 to Ltq. 15 per lighter per day; Warsaw-Poland, Danzig is capable of much improvement; Spain, lighterage necessary from vessel to shore, where cranes unload to dock; Italy, see Question No. 19 (Italy); Peru, Callao has a good harbor. Paita is fair. All other ports are open road steads except Chimbota which is a land-locked harbor. Barge discharge is necessary at all ports; Norway, 1,000 tons per day in Christiania, Bergen, Christianssand, and Trondhjem. 500 to 600 tons in other ports; Finland, 400-500 tons per day.

23. *Can Steam Consumers other than Railroads use High Volatile Coal as well as Low Volatile?*

Mexico, Belgium, Switzerland, Netherlands, Warsaw-Poland, Spain, Peru, Finland, yes; Denmark, no; Turkey, yes, although most of the coal imported is for bunkering purposes and therefore preferably low volatile; Italy, all plants in Italy prefer Cardiff coal. It has been used for generations and is well known. Georges Creek and Pocahontas enjoyed a high reputation in Italy and were considered by experts to be the equal of Cardiff. All kinds of coal, however, have recently been shipped to Italy under the generic names of "Georges Creek" and "Pocahontas." As a consequence these names no longer convey their former significance of superiority; Norway, low volatile preferred but high volatile can be used in emergency.

OKLAHOMA COMMERCE CHAMBER WORKS WITH BUREAU

PRODUCTION PROBLEMS of the Deaner oil field, Okmulgee County, Oklahoma, are being investigated by the Bureau of Mines. Most attention will be given to the difficulties caused by water. It is probable, but not certain, that this investigation will be extended later to the Slack field, also in Oklahoma.

The Okmulgee Chamber of Commerce and leading oil companies operating in the Okmulgee district requested this investigation and will co-operate actively in carrying it on. The work is being done by M. J. Kirwan and F. X. Schwarzenbek, petroleum engineers.

APPLICATIONS FOR PERMITS NUMBER NINE THOUSAND

MORE THAN 9,000 applications for prospecting permits under the act of February 25, 1920, had been filed with the General Land Office on February 20. They included about 600 for coal, 275 for phosphate and sodium and more than 8,000 for oil and gas.

"MOUNTAINS OF SHALE" NOT ON EASY STREET

ITEMS OF INVESTMENT and expense, as well as items of profit, must be considered in shale oil production just the same as in any other business. There is nothing original or startlingly new about this statement, but there are apparently so many people who do not fully realize the importance of it that the United States Bureau of Mines has felt impelled to make formal announcement to this effect.

Letters of inquiry regarding the possibilities of producing oil—and wealth—from shale are received by the Bureau of Mines, either in Washington or at its various stations, practically every day. Some of these communications display a marvelous faith in the "easy money" possibilities lying in shale oil retorting. Some of the writers calculate that they can extract so many gallons of oil from a ton of shale, that they can get so many tons of shale from a hill of a certain size, and that they can therefore amass considerable wealth in a stipulated and reasonably limited period of time—and they sit down and write the Bureau of Mines if the prospect is as alluring as they think it is. The Bureau of Mines is now able to supply all such inquirers with a formal scientific paper which shows most emphatically that it is not. It is known as Serial No. 2214, and was prepared by L. H. Sharp, chemical engineer, and A. T. Strunk, accountant, of the Bureau of Mines, who are conducting shale investigations in Colorado in co-operation with the State of Colorado. Messrs. Sharp and Strunk do not discourage shale oil development or minimize possibilities in this direction. They limit their paper to a statement of actual business conditions as revealed to them by operators.

The known sources of income from shale products are found to consist of crude oil, gasoline, kerosene, gas oils, lubricants, wax, possibly ammonium sulphate, and producer gas from spent shale when ammonium sulphate is made. It is pointed out that other products may, in isolated instances, yield profits, but that it is not safe to figure on them yet. Production of these commodities has been shown by Scottish experience to be profitable. Prospective investors are told that they must allow for refining losses larger than those from crude petroleum, and that in marketing expense calculations should be included expenditures for educating the public to the use of products different, but not inferior, to those secured from crude petroleum.

LESSONS DRAWN FROM MEMPHIS GASOLINE DISASTER

EXPLOSION of a car of absorption gasoline on January 24 at Memphis, Tennessee, with a consequent loss of eleven lives and the serious injury of nineteen persons, has been made the occasion of a special bulletin by the Bureau of Mines. D. B. Dow, petroleum engineer of the Bureau of Mines, says that the explosion is a striking example of what may take place at any time in any city by departure from the precautionary measures which should always be taken in handling gasoline, but more especially when handling natural gas gasoline.

The investigation conducted by Mr. Dow and Memphis authorities showed that one tank car of gasoline had been opened without relieving the pressure within. It was believed that the relief valves had been giving off vapors previously, and it was estimated that at a pressure of twenty-five pounds the tank popped. The removal of the dome, resulting in the sudden relief of pressure, caused both vapor and liquid gasoline to boil out of the car in large quantities. A stiff wind carried the vapors across the street, mixed them with air, and formed a readily explosive mixture. The vapor was ignited by fires burning in the open grates of buildings on the opposite side of the street from the tank cars. There was an instantaneous explosion which demolished every house on the block, and another explosion when the flames burned back to the tank cars and ignited the vapors still escaping.

The lessons drawn by the Bureau of Mines from the explosion are that the Interstate Commerce Commission regulations requiring a certain voidage above gasoline in every gas car must always be complied with, and that the safety valves on every tank car should be made use of.

METHODS OF COMPUTING OIL ROYALTIES

THE GOVERNMENT ATTITUDE toward lessees of oil and other mineral lands is that of a partner. This view of the relation was taken by F. B. Tough, government supervisor of oil and gas regulations, at a meeting in Denver of about thirty men who represented ninety per cent of the producing interests of Wyoming. Mr. Tough made the point that since the government was a partner, it was always willing to listen to suggestions and recommendations.

One of the chief subjects discussed at this meeting related to methods for computing government royalties. Mr. Tough explained the system which was then and still is in vogue, and no objections were made to it by any one attending the meeting. These methods, which the government is willing to have its "partners" criticize and aid in revising should it become necessary, are grouped under the headings of hypothetical cases and are as follows:

Case 1.—Where no new wells have been brought in during the calendar month. Count as producing wells each well which had produced fifteen days or more during the month and disregard those which have produced less than fifteen days during the month.

Case 2.—When initial production of a lease is made during the calendar month. Compute royalty on basis of well days producing.

Case 3.—Where new production is brought in during the calendar month on a previously producing lease it will be carefully reviewed by the Supervisory office of the Bureau of Mines and the officials of the company and the best method determined.

Case 4.—"Head-Wells" which make their best economical production by intermittent pumping will be considered as steady producers if so operated throughout the month.

GOLD AND SILVER IMPORTS AND EXPORTS

THE FEDERAL RESERVE Board has announced gold and silver imports and exports for January as follows (Imports consist of receipts by the United States from countries listed on the left, exports of shipments from the United States to countries listed on the left).

GOLD

	Imports	Exports
nited Kingdom—England	$22,275,781	....
ustria	4,000	....
Denmark	536	..
rance	4,695,491	...
ermany	61	....
reece	442,554	....
taly	5,000	...
etherlands	394,287	.
pain	39,280	..
urkey in Europe	220,000	
otal Europe	$28,076,990	.
anada	188,123	$180,177
osta Rica	104,870	...
onduras	26,450	....
icaragua	76,594	....
anama	81,860	..
alvador	127,360	....
lexico	505,832	2,191,203
uba	6,122	50,000
ritish West Indies	3,908	...
utch West Indies	483,800	....
otal North Amer.	$1,604,919	$2,421,380
rgentina	9,060	....
olivia	560	....
razil	190	24,300
hile	14,321	....
olombia	975,325	....
cuador	64,757	....
utch Guiana	6,517	....
eru	118,924	....
enezuela	112,235	....
otal South Amer.	$1,301,889	$24,300
hina	1,311,561	....
ritish India	1,014,025	....
utch East Indies	75,449	60,000
ongkong	1,042,000	219,300
apan	2,101,883	....
otal Asia	$5,544,918	$279,300
ustralia	1,459,950	....
hilippine Islands	89,988	...
ortuguese Africa	115,015	....
otal all countries	$38,193,669	$2,724,980

SILVER

	Imports	Exports
ance	$41,626	....
rmany	7,237	....
eece	187,655	...
ain	552	....
ited Kingdom—England	5,497	$1,370,145
tal Europe	$242,567	$1,370,145
nada	242,264	259,991
sta Rica	2,539	..
nduras	104,070	.
caragua	27,019	.
nama	2,337	1,000
vador	367	
xico	3,390,654	449,798
ba	...	282,446
tish West Indies	...	87,250
tal North Amer.	$3,769,250	$1,080,485
Argentina	$56	....
Bolivia	34,323	....
Chile	136,355	...
Colombia	19,163	142,500
Ecuador	6,119	....
British Guiana	3,993	....
Dutch Guiana	14	....
Peru	529,754	....
Venezuela	132	....
Total South America	$730,709	$142,500
China	101	$96,263
British India	....	667,813
Dutch East Indies	83,461	....
Hongkong	....	2,298,062
Japan	....	235,480
Total Asia	$83,562	$4,097,618
Philippine Islands	1,303	....
British South Africa	480	....
Portuguese Africa	10,997	....
Total all countries	$4,838,868	$6,690,748

AMERICAN FLUORSPAR SUFFERED FROM FOREIGN IMPORTATIONS

TOTAL SHIPMENTS of American fluorspar in 1920 were estimated by the United States Geological Survey at 186,000 short tons, valued at $4,544,000, as against 138,290 short tons valued at $3,525,574 in 1919. The increase in quantity was 34 per cent and in value 29 per cent, but 1920 shipments were still about 29 per cent less than those of 1918, the record year.

One Lehigh Valley consumer reported that the best grades of domestic fluorspar were superior to those of foreign origin, but that his concern imported large quantities from England because ocean freight rates were cheaper than rail rates from Illinois, Kentucky, Colorado and New Mexico, which states rank in the order named as the largest American producers. Importations during 1920 totaled 24,610 short tons as against only 6,943 tons the year before.

TALC OUTPUT BREAKS RECORDS

PRODUCTION OF TALC in 1920 was the largest in history, according to Bureau of Mines figures. It was estimated at 213,000 tons valued at $2,360,000, or an increase of 26 per cent in quantity, 6.75 per cent in price and 34 per cent in total value over 1919.

Imports also were greater than at any previous time. Estimates place the total at 24,000 tons valued at more than $475,000, as against 14,602 tons valued at $259,004 in 1919. Seventy per cent of imports came from Canada, 20 per cent from Italy, 8½ per cent from France and the remainder from various countries.

Vermont led other States with an output of 94,000 tons valued at $830,000. New York was second and California ranked third. In California the output has increased rapidly since 1912.

ENORMOUS OIL SHALE ACREAGE

FOUR MILLION acres in Colorado, Utah and Wyoming had on February 15 been classified by the Geological Survey as oil shale land subject to leasing.

PROMOTER MAY TELL CONGRESS ALL ABOUT RUSSIA

WASHINGTON D. VANDERLIP of California, whose plans for developing Russian mineral resources have received great publicity all over the world during the last few months, will probably be called to testify before the House Committee on Foreign Affairs. The State Department has informed the committee that the platinum mines of Russia were practically exhausted during the war, but that the development of mining in Russia presented no obstacles which were considered insurmountable by American enterprise.

JANUARY RAILROAD RED BOOK

GOVERNOR SHOUP of Colorado, Ex-Governor Bamberger of Utah and numerous well known writers and authorities are contributors to the January issue of the "Railroad Red Book," issued by the Passenger Department of the Denver and Rio Grande Railroad. Reviews are found in this issue of all commercial lines during 1920 and future possibilities in mining, oil and oil shale, manufacturing, agriculture and general development. In this issue there are ten articles about the Inter-mountain West, sixty-four about Colorado, thirty-four about Utah and nine about New Mexico, as well as the usual general information.

AUTOMOTIVE FUEL TESTS

AT THE REQUEST of other government departments, the Bureau of Standards is making tests on special blended automotive fuels. Representatives of the Bureau and other governmental divisions have also held conferences with members of the Fuel Research Committee of the Society of Automotive Engineers, and with representatives of other organizations, with a view to adopting a definite program for investigating automotive fuel problems.

INTERIOR DEPARTMENT EMPLOYMENT STATISTICS.—Before his retirement Chief Clerk Ayres of the Interior Department presented figures to the House Committee on Appropriations showing the following minimum and maximum salaries of employes of that department: Bureau of Mines, 673 employes, minimum pay $720 a year, maximum $6,000; General Land Office, 527, minimum, $900, maximum $3,600; Indian Office, 5,367, minimum, $720, maximum, $5,000; Geological Survey, 839, minimum, $60, maximum $12,000 (one employe only); Reclamation Service, 6,567, minimum, $480, maximum, $7,500; Bureau of Education, 203, minimum, $900, maximum, $3,500; National Park Service, 225, minimum, $900, maximum, $4,000; Alaskan Engineering Commission, 1,118, minimum, $900, maximum, $15,000 (one only); total, 20,020, minimum, $60, maximum, $15,000; average basic salary, $879.21; 268 employes retired; 81 vacancies.

D. C. WILLS, member of the Federal Reserve Board, will retire from that body at the expiration of his term on March 1. He will return to Cleveland and resume his former position as federal reserve agent.

WAR MINERALS APPEALS CAMPAIGN CAUSES CONTROVERSY

THE CONTROVERSY between war minerals claimants whose claims have been disallowed in whole or in part and the Interior Department over its administration of the War Minerals Act constitutes a regrettable situation. It is both working a hardship upon the men to whom the government has not fulfilled its pledges and causing severe criticism of the Interior Department by claimants. With the earnest hope that the present situation can and must be clarified, the Mining Congress has written the following letter:

February 9, 1921.

The Honorable
John Barton Payne,
Secretary of the Interior,
Washington, D. C.

My dear Mr. Secretary:

On August 10, 1920, in response to a request from this organization, you granted hearings to War Minerals claimants and their representatives. This organization appeared before you solely in the capacity of *amicus curiae*.

This meeting was called for the purpose of discussing some of the questions involved in the administration of the War Minerals Relief Bill and with particular reference to a measure (H. R. 13091) providing for an appeal from the decision of the War Minerals Relief Commission to the Court of Claims by those claimants who were dissatisfied with the determination made by your Department. This measure had passed the Senate, was reported favorably by the House Committee on Mines and Mining and was then upon the House Calendar for consideration.

After a most courteous consideration of the matter for more than two hours on your part during which it was stated that Congressional committees had been impressed with the thought that your Department had opposed this bill (H. R. 13091), you stated that your Department had taken no position with reference thereto, and that, in order to counteract this impression, you would write a letter to the Chairmen of the Committees of the House and Senate to the effect that your Department had not, and would not, undertake to influence Congress either for, or against, the proposed legislation.

You concluded your statement and the hearing with this query: "Is my promise in this satisfactory; is this what you gentlemen wish?" To which we replied that this was entirely satisfactory. We thereupon officially notified all claimants of the conference and your resultant promise.

Upon the convening of Congress in December your promised letter had not been written. Upon being requested for such a letter by the Chairman of the House Committee on Mines and Mining, on January 7, 1921, you wrote a letter which in no way can be construed to be a fulfillment of your promise to us. This organization is thereby placed in a most embarrassing position before its membership and we feel justified in an analysis of the reply which you did make to the Committee.

Your letter states:

> That 1203 claims for relief were filed and 1135 have been acted upon, and that your Department has followed the opinion of the Attorney General rendered July 1, 1919, in construction of the words "request or demand."

You did not refer to the fact that 812 of the 1135 cases acted upon have been entirely disallowed, nor did you refer to the fact that the Attorney General in his later opinion of October 26, 1920, addressed to you, calls the particular attention of your Department to the fact that his prior letter of July 1, 1919, did not state that the request must be "personal."

You did not state that more than 600 of these disallowed claims had been so disallowed by the War Minerals Relief Commission upon the ground that the Attorney General ruled that such request must be "personal." And that no reconsideration of these cases has been granted, notwithstanding the Attorney General's correction of your Department's ruling based on his opinion and his statement that the question of "request or demand" was a question of fact to be determined in each individual case.

You state that:

> As a matter of fact a large majority of the claimants are satisfied.

In view of the fact that more than 812 out of a total of 1203 claims have been entirely rejected, and that the files in your office are full of protests from the 300 remaining claimants to whom awards have been made in part, this statement gives to the word "majority" an unusual significance.

You state that:

> The bill in its present form would open up a large field and delay for years the conclusion of the litigation.

But, you do not refer to the fact that under the same right of appeal given to claimants under Section 2 of the same Act from decisions made by the Secretary of War, that out of a total of 7511 claims only nine appeals have been filed with the Court of Claims, of which eight are original cases appealed and the ninth the cases of a number of sub-contractors joined in the same issue.

We freely admit that doubtless some of these claims before you were properly rejected. But we insist that the 600 claimants, ruled out because of a repudiated interpretation of an opinion from the Attorney General are entitled to have their claims considered on their merits.

As it comes to us, the almost unanimous opinion of claimants is that they have not had a fair, impartial hearing.

If the writer may be permitted to express an opinion, it would be that it was extremely unfortunate that the dominating influence in your Commission should have assumed that he was charged with the partisan defense of Government's rights rather than that he was an arbiter to hear and determine the claims presented by the representatives of the claimants upon one side and upon the other side resisted by an attorney for the Government.

We insist that the first right of an American citizen—the right without which popular government must fail—is the right to have his grievance heard by an unbiased tribunal. It seems to us that any effort to prevent these dissatisfied claimants from being heard by an unbiased court is unbecoming the dignity of a just Commission. No judge, who renders an impartial verdict needs fear its review by a higher tribunal, and your letter opposing the granting of a right of appeal to an unbiased court gives room for suspicion that you are not altogether satisfied with the decisions which have been made by your War Minerals Relief Commission, and which you uphold.

This organization has no direct interest in any war minerals claimant, other than that which should impel you, not only that justice should be done, but that claimants shall feel that their rights have not been prejudiced either by a narrow construction of a remedial law or by the intense and bitter partisanship of a judge who undertakes to play the role of a "watch dog of the Treasury" by the technical avoidance of the payment of losses intended to be relieved by the statute.

FIRST: We cannot escape the feeling that the 600 claimants, who have been ruled out entirely by a repudiated misinterpretation of an opinion of the Attorney General, should have a fair hearing.

SECOND: That dissatisfied claimants who believe that the board has not been judicial in its rulings should have a right of appeal. And

THIRD: That the Executive Department of the Government should not attempt to influence the Legislative Department, especially when it has expressly promised not to do so.

Because of our long years of complete harmonious contact with the Department of the Interior in its administration of such problems as affect the mining industry, this is the first time that such a communication on the part of this organization to the Interior Department has been necessary and we therefore, regret all the more sincerely the humiliating duty of writing this letter.

Very respectfully yours,
THE AMERICAN MINING CONGRESS,
J. F. CALLBREATH,
Secretary.

MINT AND ASSAY OFFICE FUNDS RESTORED TO BILL

THE APPROPRIATION for the Carson City, Nevada, mint, which was stricken out of the Legislative Appropriation Bill by the House, was restored through the adoption of an amendment proposed by Senator Pittman of Nevada. It is considered probable that the appropriation bill when it passes will contain the amendment and that the mint at Carson City will continue in operation.

An amendment restoring the appropriation for the office of Surveyor General of South Dakota was secured by Senator Sterling. The senator maintained that the continuance of the office would be necessary for at least three years in order to complete surveys in the Black Hills, including 2,000 mining surveys.

The bill as it was finally reported to the Senate restored the appropriation for the Deadwood, S. D., assay office, and carried no appropriation for the New Orleans mint.

GEMS AND PRECIOUS STONES

UNITED STATES production of gems and precious stones in 1919 aggregated $111,763 as compared with $106,523 in 1918, the increase being about 50 per cent. Scarcity and high prices of labor operated to decrease production in many lines. The decline was especially marked in opal and likewise in topaz, none of the latter mineral being produced or reported from either Maine or California. Among others of which there was a decrease in production were beryl, corundum, diamond, chlorastrolite, copper-ore gems, datolite, feldspar, hematite, lapis lazuli, rhodonite, spodumene, and thomsonite.

MINES BUREAU OFFICIALS SPEAK.—Dorsey A. Lyon, chief metallurgist and supervisor of stations of the Bureau of Mines, was a guest recently at a meeting of the American Institute of Engineers of Spokane, Washington. He and A. W. Fahrenwald, who has been assigned to the Moscow experiment station, delivered addresses.

National Legislation

INTEREST in legislation before Congress during February has centered around the Packer's Bill to control the packing industry and the Calder Bill for the control of the coal industry.

It is understood that Senator Frelinghuysen intends to press for consideration in the next Congress his bill providing a Federal Coal Commissioner and seasonal rates on coal. Hearings on these bills were held before the sub-committee on Interstate Commerce last spring.

The House Committee on Mines and Mining reported the Robinson bill for the relief of war minerals claimants, which bill was passed by the Senate last session. Representative Baker of California introduced a bill in the House similar to the bill by Senator Robinson.

The Senate has passed the Smoot resolution calling on the Treasury Department for information as to the number of claims for refund, abatement, or credit against assessments of income and excess profits taxes for 1917, 1918, and 1919 for use in considering the Revenue Laws. The House Ways and Means Committee favorably reported the resolution passed last session which was introduced by Senator Harris of Georgia, calling on the Treasury Department for information as to income and profit taxes in 1918.

Representative Moores of Indiana introduced a bill to meet the proposed export tax of 12½ percent *ad valorem* on exports from Germany by levying a like tax on all imports into the United States from all nations participating in the laying of the export tax on German products.

The Treasury Department has endorsed the principle of the amendments to H. R. 14198, the Green Bill, which permits oil producers whose operating profits impounded until released by the Mineral Lands Leasing Law to prorate such receipts at their option over the several years of accumulation in arriving at income and excess profits taxes. Under the present law profits are held to be taxable as income for the year in which received. The Green Bill passed the House unanimously last May and is now before the Senate Finance Committee.

The Senate Committee on Interstate Commerce has reported the bill providing a substitute for Section 10 of the Clayton Act relating to interlocking directorates. The committee follows the Interstate Commerce Committee suggestion that in cases of transactions involving more than $100,000 a year between a corporation and its subsidiary the purchase must be made through competitive bidding.

The Public Lands Committees of both the House and the Senate have reported the bills for the leasing of boron deposits.

The bill which permits the cutting of timber for mining purposes by corporations organized in one state and conducting operations in another became a law without the approval or disapproval of the President within the ten-day time limit.

Senator Smoot of Utah has introduced a bill amending the leasing law by granting prospecting permits on known geologic structures of a producing oil or gas field prior to designation as an oil structure and discovery of oil or gas.

The appropriation bill covering the Department of Labor carried an appropriation of $250,000 for a national system of employment offices.

The increase under the Sundry Civil Appropriation Bill for mining experiment stations has resulted in the announcement that a station will be opened at Butte, Montana, if the House accepts the amendment and the bill is approved by the President.

The House Committee on Mines has decided to postpone until the new Congress consideration of the bill authorizing the Bureau of Mines to purchase coal and other fuel for the government service throughout the country.

Senator Ashurst of Arizona secured the adoption of an amendment to the Indian Appropriation Bill providing for the leasing of unallotted leasing lands in Arizona, California, Idaho, Montana, Nevada, New Mexico, Oregon, Washington, and Wyoming for the purpose of mining manganese, gypsum, limestone, and asbestos. The House has agreed to the Senate amendment.

A resume of the important bills introduced since January 20 follows:

COAL

H. R. 15976. Introduced by Mr. Rhodes; referred to the Committee on Mines and Mining. The bill authorizes the director of the Bureau of Mines to select and contract for all coal and other fuel required by any branch of the federal service at the seat of government or elsewhere within the United States. Any other branch of the federal service upon approval by the director of the Bureau of Mines may select and purchase its own coal. The director is authorized to investigate the coal and other fuel-burning equipment of the different branches of the federal service and their methods of handling, storing, and using and to recommend changes in equipment which will result in the greatest fuel economy. He is authorized to contract for the purchase of coal and other fuel for the different branches of the federal service in advance of the availability of appropriations for the payment thereof, but such contract shall not exceed the necessities of the current year. Different branches of the federal service under contract made by the director of the Bureau of Mines, during April, May, and June of each year are authorized to purchase such quantities of coal and fuel as it may be practicable to store at the points of consumption, payment therefor to be made within the fiscal year. Each branch of the service shall pay into the treasury of the United States to the credit of the director of the Bureau of Mines an amount to be fixed by him, but in no case to exceed 2 cents per ton, which money is to be expended for the employment of personal service in the District of Columbia and elsewhere and for all other expenses requisite for and incident to carrying out the provisions of the act. Not more than $100,000 may be expended in the enforcement of the act in any one year.

H. R. 15728. Introduced by Mr. Butler; referred to the Committee on Naval Affairs. (Requisitioning fuel for the navy). The bill provides that until June 30, 1922, the President is authorized to requisition fuel necessary to the maintenance of the navy and to requisition facilities for handling and storing such fuel; and he shall ascertain and pay a just compensation therefor. If the compensation so determined is not satisfactory to the person entitled to receive the same, 75 percent of the amount so determined by the President and shall be entitled to sue the United States to recover such further sum as will be just compensation for the property so requisitioned.

H. R. 15830. Introduced by Mr. Sinnott; referred to the Committee on Public Lands. (Alaska coal leases.) The bill amends the original Act providing for the leasing of coal lands in Alaska by providing that any unreserved coal lands and coal deposits shall be divided by the Secretary of the Interior into leasing blocks or tracts of forty acres each; but in no case exceeding 2,560 acres in any one leasing block or tract, which blocks shall be offered by the Secretary for leasing through advertisement, competitive bidding, or such other methods as he may by general regulations adopt. It is provided that the majority of the stock of such corporations as lease the lands shall at all times be owned by citizens of the United States and that no railroad shall be permitted to acquire through lease or permit any coal or coal lands in excess of the area or quantity which may be required for its own use solely. It also provides that where prospecting or exploratory work is necessary to determine the existence of coal deposits, prospecting permits may be issued for a term of not to exceed four years under such rules and regulations as the department may prescribe.

S. 4864. Introduced by Mr. Smoot on January 17; referred to the Committee on Public Lands, from which committee it was reported on January 31, amended as follows: That where prospecting or exploratory work is necessary to determine the existence or workability of coal deposits in any unclaimed, undeveloped area in Alaska, the Secretary of the Interior may issue prospecting permits for a term of not to exceed four years, under such rules and regulations and conditions as to development as he may prescribe, to applicants qualified under this act, for not to exceed two thousand five hundred and sixty acres, and if within the time specified in said permit the permittee shows to the Secretary of the Interior that the land be entitled to a lease under the act for all or any part of the land in his permit. This bill was reviewed in the February issue of the MINING CONGRESS JOURNAL. The original bill was entirely crossed out by the committee considering it and the above recommendations were made for amendment to Section 3 of the Leasing Bill.

REVENUE

S. 5007. Introduced by Mr. Gore; referred to the Committee on Finance. Amending sub-division B of section 250 of the Revenue Act to provide that where additional taxes on income and profits accruing prior to January 1, 1920, are assessed or determined because of understatement without intent to defraud, and it is shown to the satisfaction of the commissioner that the taxpayer is without adequate means to pay such additional taxes immediately and is unable to borrow the amount required to pay such taxes at reasonable rates of interest, the commissioner may accept payment of such additional taxes in installments fixed with respect to time and amount at his discretion but in no case to exceed twelve months from the date upon which the taxpayer is notified that such additional taxes are due. Except in cases in which a higher rate of interest is now imposed by law, the amount of taxes so deferred shall bear interest at the rate of two-thirds of 1 percent a month from the date upon which the taxpayer is so notified, to be paid at each deferred installment date, in addition to the amount of tax then payable. The commissioner, with the approval of the Secretary, is authorized to make all needful rules and regulations for the enforcement of the provisions of the act.

H. R. 16026. Introduced by Mr. Moores of Indiana; referred to the Committee on Ways and Means. The bill provides that whereas an agreement has been concluded between the Allied Powers to exact from Germany an export tax of 12½ percent *ad valorem* on all exports from Germany; and whereas the effect of this tax will be to compel American importers and consumers to pay a tax in dollars, that immediately upon the going into effect of any tax on German exports, payable in the money of the country to which the exports are sent, the President shall issue a proclamation, announcing the fact, and setting forth the names of the participating nations. An additional customs surtax of twelve and one-half percent *ad valorem* shall be levied on all articles produced, grown, or manufactured, wholly or in part, in any participating nation; all articles imported into the United States in ships flying the flag of any participating nation; that a participating nation may withdraw from participation by consenting to repeal of the German exports tax, waiving all right to all or any part of the proceeds of the tax, levying a tax of twelve and one-half percent *ad valorem* on all imports from other participating nations, and on all goods imported under the flag of a participating nation. Section 5 of the act provides that when a participating nation has withdrawn from participation the President shall issue a proclamation to that effect, and thereafter the customs surtax prescribed in section 3 of this act shall not apply to that nation, and that all laws, and all treaties, or parts of treaties, in conflict with this act are repealed.

REVENUE

S. 4917. Introduced by Mr. Spencer; referred to the Committee on Finance. (Amending Revenue Act.) This bill amends the Revenue Act of 1918 by inserting a new sub-division in section 234, which reads as follows: Contributions or gifts made within the taxable year to corporations organized and operated exclusively for religious, charitable, scientific, or educational purposes, or for the prevention of cruelty to children or animals, no part of the net earnings of which inures to the benefit of any private stockholder or individual, or to the special fund for vocational rehabilitation authorized by section 7 of the Vocational Rehabilitation Act, to an amount not in excess of 15 percent of the taxpayer's net income as computed without the benefit of this paragraph. Such contributions or gifts shall be allowable as deductions only if verified under rules and regulations prescribed by the commissioner, with the approval of the Secretary. This act shall take effect immediately upon its passage.

S. J. Res. 146. This bill was introduced in the House of Representatives on June 5 and referred to the Committee on Ways and Means. On January 29 it was referred to the House calendar and order to be printed. The bill had previously passed the Senate on June 2, 1920, and provides that the Secretary of the Treasury be directed to furnish the Senate the following information to be secured from the income and profits tax returns for the taxable year 1918 of all corporations which have earned in excess of 25 percent on their capital stock: Capital Stock; Invested Capital; Net Income; Percent of Total Tax to Net Income; Net Income After Deducting Tax, etc.

TARIFF

H. R. 16101 (*Barytes*). Introduced by Mr. Rhodes; referred to the Committee on Ways and Means. This bill imposes on all crude barytes ore a duty of three-fourth of 1 cent per pound; on all ground baytes or barium sulphate, a duty of 1¼ cents per pound; on all barium sulphide, a duty of 1½ cents per pound; on all barium carbonate, a duty of 2 cents per pound; on barium binoxide, a duty of 2 cents per pound; on precipitated barium sulphate, a duty of 2 cents per pound; on barium chloride, a duty of 2½ cents per pound; on all lithopone, a duty of 2½ cents per pound; on all barium nitrate, a duty of 5 cents per pound; on all barium peroxide, a duty of 8 cents per pound; and on each and every other barium compound, and barium chemical, a duty of 25 percent *ad valorem*.

H. R. 16102.—*Cobalt*—Introduced by Mr. Rhodes; referred to the Committee on Ways and Means. (Cobalt.) The bill provides for a rate of tariff duty upon cobalt or oxide of cobalt of 75 cents per pound.

H. R. 16105—*Lead*—Introduced by Mr. Rhodes; referred to the Committee on Ways and Means. This bill imposes upon all lead contained in lead-bearing ores a duty of 1½ cents per pound; on all lead dross, lead bullion or base bullion, lead in pigs and bars, old refuse lead run into blocks and bars, old scrap lead fit only to be remanufactured, lead in sheets, pipe, shot glazier's lead, lead wire, pencil lead not in wood or other material, 2 cents per pound; on all lead pigments including litharge, orange mineral, red lead, white lead, and all pigments containing lead, dry or in pulp, and ground or mixed with oil or water, acetate of white lead, nitrate of lead, acetate of brown, gray, or yellow lead, 5 cents per pound; and all other lead products or compounds not specifically provided for in the Act, 40 percent *ad valorem*. The bill expressly repeals all existing laws for fixing the duty upon lead.

POTASH

S. Res. 435. Introduced by Mr. Fletcher, which was on January 26 considered and agreed to. It provides that the Secretary of Agriculture is authorized and directed to ascertain as nearly as possible, and to report to the Senate as soon as practicalbe, the following: The amount of commercial potash, nitrogen and phosphoric acid available for fertilizer purposes and the price of each of these articles as compared with the prices for 1913, as shown by data in the office or that can be secured without material expense; and to furnish any suggestions as to relieving the situation in case the amount of any or all of these is insufficient or the price prohibitive, and to report what investigations were made and with what results, mentioned in Senate Document 262, Sixty-Fourth Congress, first session.

WAR MINERALS

S. 4900. Introduced by Mr. Robinson; referred to the Committee on Mines and Mining. Reported by Mr. Walsh with amendment. The bill provides that Section 5 of the Act approved March 2, 1919, be amended by adding the following: Provided that this section shall be liberally interpreted, and that all claimants who in response to any personal, written, or published request or demand from any of the government agencies mentioned in said act in good faith expended money in producing or preparing to produce any of the ores or minerals named therein and have heretofore filed their claims within the time and in the manner prescribed by the act, shall be reimbursed such net losses as they may have been found to have incurred and are in justice and equity entitled to from the appropriation in the act, and that the unexpended portion of the appropriation carried in the act be continued available for the purposes named above until all claims shall be finally settled or disposed of.

ANTI TRUST

H. R. 16060. Introduced by Mr. Esch; referred to the Committee on Interstate and Foreign Commerce. Amending the Interstate Commerce Act by adding a new section to be known as 20-B, which provides that after sixty days from passage of the bill no carrier shall have any dealings in materials, supplies, or other articles of commerce, or shall make any contracts or have any contracts made for construction or maintenance of any kind, to the amount of more than $100,000 in the aggregate in any calendar year, with another corporation, firm, partnership, or association not a common carrier, railroad company, terminal company, or joint facility company that is subject to Section 20 of the Interstate Commerce Act when carrier shall have as a director, president, manager, purchasing or selling officer, or agent in the transaction any person who is at the same time a director, manager, purchasing or selling officer, or agent in the transaction of, or who has any substantial interest in, such other corporation, firm, etc., unless such dealings be with the bidder whose bid is the most favorable. Every carrier having any such contracts required to be made by competitive bidding shall, within thirty days after making the same, file a full and detailed statement of the transaction showing the manner of the competitive bidding, who were the bidders, their names and addresses, and the names and addresses of the directors and officers of the corporations and the members of the firms or partnerships bidding. A fine of $25,000 is imposed for violation by a carrier and a fine of $5,000, one year in jail or both is imposed for any violation by any director, agent, manager or officer, who shall have knowingly voted for or directed the act constituting such a violation.

H. R. 15126. Introduced by Mr. Esch. This bill was introduced December 15 and referred to the Committee on Interstate and Foreign Commerce from which committee it was reported on December 30 and referred to the Select Committee on Water Power. This committee on February 10 reported the bill with amendments. The bill as it now goes to the House provides that the original bill be amended by giving the commission power to appoint an executive secretary who shall receive a salary of $7,500 per annum. The commission in the performance of its work shall utilize so far as is practicable the field offices and personnel of the Departments of War, Interior, and Agriculture. It appropriates $100,000 to carry out the provisions of the act.

INTERSTATE COMMERCE COMMISSION

H. R. 15875. Introduced by Mr. McLaughlin; referred to the Committee on Judiciary. The bill provides that hereafter all meetings of the Federal Reserve Board and Interstate Commerce Commission, or any division, committee, or subcommittee of either such body, shall be open to the public and that all records, books, papers, documents, and correspondence of either body shall be open to public inspection.

INVESTIGATIONS

H. Res. 651. Introduced by Mr. Jones of Texas; referred to the Committee on Rules. This bill provides for an investigation of the affairs of the International Harvester Company with a view to determining the cause for the advance in price of their products and to ascertain what is a reasonable price for such machinery.

S. Res. 436. Introduced by Mr. Harris, which authorizes the Federal Trade Commission to inquire into the price of print paper during the last year and ascertain whether or not the newspapers of the United States are being subjected to unfair practices in the sale of print paper.

LOBBYING

H. R. 15820. Introduced by Mr. Welty; referred to the Committee on Judiciary. This bill is substantially the same as the bills reviewed in the February issue of the MINING CONGRESS JOURNAL introduced by Mr. Curtid and Mr. Overman. It prohibits lobbying and requires proper registration of those who desire to appear before committees in regard to legislation.

INTERNATIONAL HIGH COMMISSION

S. 4906. Introduced by Mr. Lodge; referred to the Committee on Foreign Relations. Amends the original act by providing that there be established the United States Section of the Inter-American High Commission, consisting of the Secretary of the Treasury and eight other persons named by the President, whom with the exception of the Secretary of the Treasury shall serve for five years without compensation. The United States Section shall cooperate with the other sections of the Inter-American High Commission in bringing about between the republics of North, Central, and South America and the West Indies a substantial uniformity in commercial law and practice, and in fiscal and administrative regulations, particularly as concerns bills of exchange, checks, commercial paper, and bills of lading; the classification of merchandise; rates of postage; facilities of communication and transportation; the establishment of a standard of value and the stabilization of exchange, etc. It shall not, however, be concerned with the promotion of trade, or with matters essentially diplomatic or political in character. The Secretary and Assistant Secretary of this section shall receive salaries of $5,000 per annum.

DISARMAMENT

S. J. Res. 225. Introduced by Mr. Borah; referred to the Committee on Foreign Relations. This resolution authorizes the President to advise the governments of Great Britain and Japan that the United States is ready to take up with them the question of disarmament. The bill gives the President the authority to advise these nations that our government will, without waiting upon the government of any other nation, take up the question of naval disarmament with a view of promptly entering into a treaty by which the naval building programs of each of these governments shall be substantially reduced annually during the next five years.

HOUSE PAYS TRIBUTE TO MEMORY OF CONGRESSMAN GARLAND

SERVICES in memory of Congressman Mahlon M. Garland of Pennsylvania, chairman of the House Committee on Mines and Mining, were held in the House on February 6. Memorial addresses were made by Congressmen Kelly, Crago, Walters, Nolan, Burke, Zihlman, Campbell, Shreve, Watson and Wingo.

MINERAL EXAMINERS NEEDED

CIVIL SERVICE examinations for the position of mineral examiner will be held March 24 at various places in all the different states. The positions to be filled call for the performance of duties at the General Land Office in Washington and also in the field. Salaries will range from $1,500 to $1,620 a year. It is desired that applicants possess actual practical experience either in the work of a mining engineer or in the investigation of mineral or oil deposits.

COUNCIL OF DEFENSE BEGINS TO GO OUT OF BUSINESS

AS A RESULT of the refusal of both House and Senate to make an appropriation for its maintenance, the Council of National Defense will probably go out of existence at the beginning of the next fiscal year on July 1. The House first refused an appropriation of $75,000 and the Senate later did the same thing, the vote being 41 to 21.

Secretary Baker, chairman of the council, appeared before the Senate Committee on Appropriations and made a plea for the appriation. He said the council carried on a study of the copper and steel situation as it affected the War Department, and that in case of a sudden emergency the council would know which way to turn. Senators Warren of Wyoming and Overman of North Carolina also favored continuance of the council for the same reason as advanced by Secretary Baker. Another argument advanced in favor of the appropriation was that it kept the records of various other government agencies which had been abolished, but this argument was met by the statement that these records had in reality been turned over to the regular departments of the government. As an illustration, it was shown that all documents of the Railroad Administration and both the Anthracite and Bituminous Coal commissions had been given to the Bureau of Mines, and that the council was no longer concerned in them. Senators McKellar of Tennessee and Sterling of South Dakota led the fight against any appropriation for the council.

Late in February Emmons K. Ellsworth, acting director of the council, and Susan H. Walker, editor of the "Daily Information Digest," issued a statement that "Because of this action, it is considered that the interest of the government will be best served by discontinuing at once the research work of the council." The Digest, which consisted of a daily mimeographed announcement of the titles of pamphlets, booklets and press bulletins issued by other government departments, was discontinued at once.

ECONOMY IN EXPLOSIVES HELD TO BE SAFETY FACTOR

CLOSED MAGAZINES have resulted in the saving of money to those mines which have tried them, according to information sent in to the Bureau of Mines. Some of the operators claim that the supervision of the placing of holes has resulted in the saving of 20 to 25 per cent of all explosives used, a saving which if applied to all of the mines of one large western corporation would amount to nearly $300,000 per year.

The practice of having open magazines at all levels where miners are permitted to secure explosives at any time in such quantities as they desire is held by the Bureau of Mines to be both dangerous and costly. The Bureau favors the use of closed magazines exclusively, with close supervision over the power of distribution.

REPORTS OF BUREAU OF MINES AND GEOLOGICAL SURVEY

"Lead in 1918," by C. E. Siebenthal, Geological Survey.

"Sand and Gravel in 1919," by R. W. Stone, Geological Survey.

"State Mining Laws on the Use of Electricity in and about Coal Mines," by L. C. Ilsley, Bureau of Mines.

"Stenches for Detecting Leakage of Blue Water Gas and Natural Gas," by S. H. Katz and V. C. Allison, Bureau of Mines.

"Storage Battery Locomotives," preliminary investigations, with specifications, laboratory tests and permissible schedule; by L. C. Ilsley and H. B. Brunot, Bureau of Mines.

"Structure in Paleozoic Bituminous Coals, "Bulletin No. 117, by Reinhardt Thiessen, Bureau of Mines.

"Causes and Prevention of Fires and Explosions in Bituminous Coal Mines," Miners' Circular No. 27, by Edward Steidle, Bureau of Mines. Contains 117 illustrations each with explanatory paragraph.

"Consumption of Reagents Used in Flotation," by Thomas Varley, metallurgist, U. S. Bureau of Mines.

"Tests of Carbon Monoxide Detector in Mines," by D. Harrington and B. W. Dyer, mining engineers, Bureau of Mines.

"Tests of Miners' Flame Safety Lamps in Gaseous, Coal-Dust Laden Atmospheres:" by L. C. Ilsley and A. B. Hooker, Bureau of Mines.

"Structure in Bituminous Coals," Serial No. 2196, by Reinhardt Thiessen, Bureau of Mines.

World Atlas of Commercial Geology, Part 1. on distribution of Mineral Production; United States Geological Survey An artistic volume containing seventy-two full page maps, as well as information suggested by the title.

TWO MILLION TONS OF GLASS SAND were used in the United States in 1919. The Geological Survey in a recent bulletin pointed out that sand forms from 60 to 75 per cent of all glass manufactured. About 500,000 tons of furnace sand, which is highly refractory silica, is used in the country annually.

ALCOHOL EXTRACTION FROM COAL.—Tests at the Bureau of Standards show that alcohol can be extracted from coal by a carbonizing process. It is estimated that a ton of coal will produce about two gallons of pure ethyl alcohol, the method of carbonizing consisting of reducing the coal to coke and then recovering the alcohol and its derivatives from the gas.

STATES AID SHALE WORK.—Colorado and Utah have contributed $20,000 for oil shale investigations by the Bureau of Mines, Dr. F. G. Cottrell stated before the House Committee on appropriations.

BUREAU OF MINES TURNOVER.—Out of 401 employes of the Bureau of Mines, 190 left the service. Of the 119 technical men, 66 resigned. Most of the technical changes were in the petroleum division.

LITTLE TIN IN NEW MEXICO

AN ADVERSE REPORT has been made by J. M. Hill, of the Geological Survey, upon the tin resources of the field in New Mexico south of Magdalena and Datil, along Taylor Creek at the headquarters of the East Gila River. Stream tin was found there in 1918 and tin prospects were located in 1919. Mr. Hill concluded that, "On the whole, the district does not look promising as a possible producer of this much needed metal."

BLACK SMOKE INVESTIGATION

AT THE INTERMOUNTAIN STATION, Salt Lake City, the municipal government and the Bureau of Mines are cooperating in investigating the abatement of black smoke. The bureau has transferred $3,000 from its smoke abatement allotment to defray expenses of the station's work.

MONTANA TOWNSITES TO BE SOLD.—All unsold lands within the government townsites of Huntley and Osborn, Mont., will be offered at public sale April 16. Huntley is the junction point of the N. P. and the Burlington railroads and Osborn is bisected by the former.

Gas Charges in National Park.—The National Park Service of the Interior Department closely watches gasoline prices in the government national parks, according to statements made by Superintendent Mather before the House Committee on Appropriations. Mr. Mather said the rates in general were reasonable and no higher than they should be considering the distance of the parks from the center of travel. Director Mather recommended an electric lighting plant for the Glacier National Park to be operated by gasoline.

New York Assay Office Repairs.—Repairs to the New York Assay Building, damaged by the Wall Street explosion last September, will cost $46,214.

New Superpower Advisor.—Henry C. Perkins, mining engineer, Washington, D. C., has been appointed a member of the Superpower Survey Advisory Board. He has attended all meetings since January 1.

Oil Inspections Completed.—K. C. Heald, who during the last four months of 1920 inspected oil fields in Montana and Wyoming, finished on the Rock Creek oil field and made miscellaneous examinations for the land classification board. He has returned to the Washington Office of the Geological Survey.

Gladys K. Drach has been appointed mineral geographic aid in the Geological Survey. She has been assigned to the oil and gas development record department.

T. C. Hopkins, of Syracuse University, is doing special work for the foreign mineral reserves section of the Geological Survey.

Osage Mineral Extension.—Extension of the Osage mineral lease until 1956 has been recommended by oil lease holders of the reservation in hearings before the Senate Indian Committee.

Unemployment Statistics.—An organization which has made a summary of the unemployment situation estimates that of the 2,325,000 workers out of employment, 150,000 are steel and iron workers and 50,000 metal mine workers.

OIL AND GAS PERMITS

The following permits to prospect for oil and gas have been issued by the General Land Office:

California. El Centro District: W. F. Gillett, 2,560 acres; Ira Feldman, 2,560 acres; Frank M. Silverthorne, 640 acres; Lewis C. King, 2,560 acres; Emma Grieve and Blanche Covert, 1,280 acres; Frank Silverthorn, 640 acres; I. N. Vining, 2 permits, 640 acres. Independence District: Howard Edgar, 2,560 acres; Lee Osmonson, 2,528 acres. Los Angeles District: Oliver Rogers, Richard S. Corey, Frank R. Miller, 2,000 acres; Seaboard Petroleum Co., 480 acres; Roy E. Kitching, 2,545 acres; J. N. Metcalf, 120 acres; L. B. Ehrlich, 80 acres; H. C. Peters, 320 acres. San Francisco District: Adolph Gunzendorfer, 2,560 acres; Samuel H. Williams, 2,560 acres; Frank J. Corr, 920 acres; Adolph Gunzendorfer, 2,507 acres; Sven H. Svenson, 2,320 acres. Visalia District: John F. Dockweiler, 405 acres; Eva C. Slover, 528 acres; J. V. McNeil, 521 acres; Earl S. Shaw, 2,545 acres; Ed. Bensen, 640 acres; Ernest Schroeter, 183 acres; Floyd E. Green, 40 acres; W. E. Higgins, 80 acres; G. L. Warson, 2,250 acres; M. F. Luton, 120 acres; R. H. Smith, 1,760 acres; E. B. Miller, 320 acres; Amos W. Elliott, 1,934 acres; The Hogan Realty Co., 160 acres.

Idaho. Hailey District: Lemki Valley Oil and Mineral Co., 2,559 acres; Sunrise Oil and Gas Co., 80 acres; A. D. Ash and E. D. Ellsworth, 840 acres; F. J. Marshall, 80 acres; West Coast Oil and Gas Co., 280 acres.

Montana. Great Falls District: Marshall I. Blakemore, 118 acres; Andrew J. King, 1,544 acres; Rudolph H. Jordan and Nate Wortheim, 321 acres. Glasgow District: J. R. Bryan, 1,160 acres; C. C. Calhoun, 240 acres; Saml. B. Hill, 1,340 acres; Alfred M. Fruh, 2,080 acres; Wm. D. Keene, 480 acres; Frank B. Lambert, 320 acres. Lewiston District: Matthew W. Wildeschutz, 320 acres; Frank L. Bigler, 80 acres. Miles City District: Ernest T. Fenton, 2,541 acres; Claude A. Gunnett and John W. Dorrington, 160 acres; Leslie McGraw, 120 acres; Corwin T. Lakin, 280 acres.

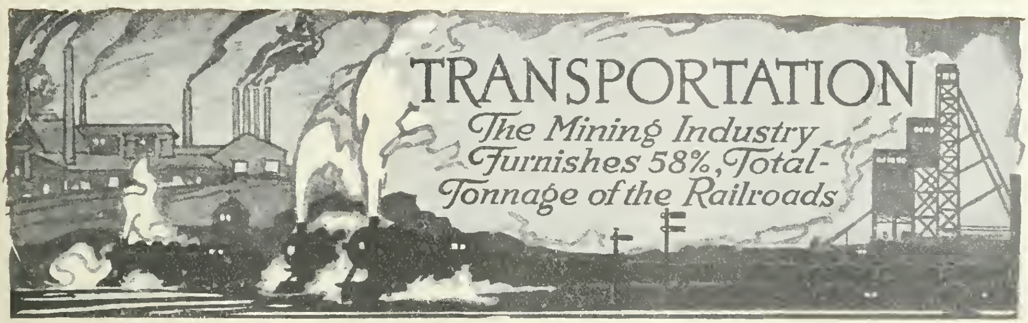
Nevada. Carson City District: Waseuk Oil and Gas Co., 2,080 acres; Ernest Cole, 1,280 acres; John P. McCann, 2,560 acres; Arthur G. Hatch, 480 acres; Wheeler Oil Syndicate, 1,600 acres; Diamond Oil Co., 320 acres; Thos. W. Medley, 2,560 acres; Wassak Oil and Gas Co., 2,080 acres; Wheeler Oil Syndicate, 1,600 acres; Nevada National Oil Co., 160 acres. Elko District: Bull Run Oil and Gas Co., 2,560 acres; Orville B. Barnes, 2,560 acres; G. M. White, 2,557 acres; Herbert Freston, 2,560 acres.

New Mexico. Roswell District: E. A. Cahoon, 2,560 acres; Leigh W. Crouse, 2,560 acres; O. R. Tanner, 1,280 acres. Santa Fe District: Ralph P. Kellog, 2,558 acres; Ralph P. Kellog, 2,558 acres; C. B. Weeks, 640 acres.

South Dakota. Rapid City District: Horace J. Thomas, 2,551 acres.

Utah. Salt Lake City District: Agnes D. Leland, 2,400 acres; Knox Patterson, 917 acres; E. H. Mortimer, 2,560 acres; J. L. Timmons, 2,560 acres; Eliz. McHatton, 2,560 acres; Chas. Youle, 2,499 acres; C. A. Ireland, 2,400 acres.

Wyoming. Cheyenne District: H. W. Eveleigh, 2,237 acres; A. E. Lamberson, 2,560 acres; Albert E. Stirett, 2,200 acres; L. C. Larsen, 960 acres; E. G. Guyle, 1,280 acres. Evanston District: R. H. Bitner, 1,360 acres. Lander District: Will C. Metz, 1,280 acres; Green Consl. Co., 1,099 acres; J. W. Rosseau, 261 acres. Newcastle District: Herbert H. Brush, 1,658 acres; Geo. C. Coking, 240 acres; D. Bailey, 320 acres; Davis R. Shakleford, 1,273 acres; H. H. Burch, 800 acres.



WAR LABOR AGREEMENTS BEARING HEAVILY UPON THE RAILROADS

By C. H. Farrell

THE RAILROAD LABOR BOARD has for the past month been listening to various arguments of the railway executives and the brotherhoods for the purpose of determining what action shall be taken regarding continuation of the national agreements which were entered into during federal control by the brotherhoods and the Director General of railroads. At the present time the brotherhoods are pressing for a postponement of the hearings in the hope that some further conferences can be had which will clear up the situation to some extent, but the carriers are quite insistent that the hearings be concluded promptly and a decision reached by the board because the spokesmen say that the railroads of this country are face to face, or will be, with insolvency if something isn't done promptly to relieve them.

This much is certain—the carriers today are operating under the highest basis of rates ever known in the history of the country, and according to their own figures they are earning only about half of the six percent which Congress has said they are entitled to. There can be no further increase in rates—in fact, it is quite evident that there must soon be a reduction. Commodities of all kinds are falling in price on every hand, and the decreased tonnage handled by the roads during the last few months is a marked indication that the traffic will not bear even the present rates. There is only one hope, and that is in increased efficiency of operation. The carriers state that if the national agreements are abrogated or even amended so as to permit them to deal with their employes by railroads or by sections, as the case may be, a saving in operating expenses of $300,000,000 can be effected without making any general reduction in wages. The objections to the national agreements put forth by the carriers are that they make wages and working conditions identical throughout the United States regardless of innumerable differences in local conditions, and that their operation puts upon the railroads hundreds of millions of dollars of operating expense, much of it for labor never performed. The brotherhoods contend that the desire to abrogate the agreements is merely a scheme to chop up the unions into many little parts for the purpose of totally destroying them.

As an instance of the waste brought about by the national agreements, General Atterbury, for the carriers, shows that in 1917, prior to federal control, the railways employed 302,828 shop men and that in 1920, with only a slight increase in the number of locomotives and cars to be maintained, the number of shop employes had jumped to 443,774, an increase of 140,946, or 47 percent, which brought about a corresponding increase in the total wages paid of 180 percent. The increase in the number of clerks in 1920 over 1917 was 29 percent and the increase in wages 112 percent. The number of maintenance of way employes during this period increased 126,000, and their wages jumped $256,000,000, or 112 percent. This great increase in the number of employes is said to be due to the rules and working conditions which destroyed the efficiency of labor, reduced the output per man, and rendered it necessary to employ a much larger force. The total increase in the number of employes of the railroads under government control was 261,000, and the carriers stressed the fact that out of this increase 232,563 more men were employed as clerks, shop men, and maintenance of way employes, all of whom are represented by the three principal national agreements.

Some of the instances cited by the railroads as to payment for labor never performed read a bit like fiction, as, for example, the Pere Marquette Railway was compelled to pay $9,364 in back pay to four employes because their titles under these agreements were changed, although the work remained the same. An employe of the Virginian Railway was laid off with other employes because there was no work for him to do, and when he became entitled, under his seniority rights, to be again employed, he received back pay and overtime in the amount of $1,000. On the El Paso & Southwestern a train was delayed one hour and thirty minutes, and an employe was paid five hours' time for making repairs to a window which took thirty minutes, when a foreman who was present could have done the work without delaying the train. Four car men on the same road were sent out on the line to do a piece of work that took four hours and thirty-three minutes—the company was compelled to pay these men for one hundred and twelve hours' work. On the Norfolk & Western five machinists were sent to an outlying point where they actually worked eight hours per day for three days—each of them had to be paid straight time for the twenty-four hours they did work and time and one-half for the seventy-two hours they didn't work. The shop crafts agreement provides that when employes are required to check in and out on their own time they will be paid one hour extra at the close of each week, no matter how few hours they may have worked. This rule, for the first six months of 1920, cost the railroads $6,500,000. A machinist was paid sixteen and one-half hours' wages for work performed within eight hours, because of the rule requiring that for each call to work the employe shall be allowed five hours' pay even if he works only ten minutes on the jobs for which he is called.

Another complaint of the carriers is against piece work, which it is said decreased efficiency greatly, and instances are cited to prove this statement. The Chesapeake & Ohio reports that it took a man 1.47 hours longer to paint a locomotive under the hourly system of pay than it did when he was paid by the amount of work turned out, and that the time required for a man to paint a freight car increased 27.89 hours when the man was paid by the hour instead of by the job. The average number of wheels bored per hour at the Huntington Shops decreased 17 percent when the change was made from the piece work basis to the hourly basis. There are reports from other carriers given, and the summary shows that the abolition of piece work basis of pay decreased average output 26 percent.

IRON ORE RATES.—The Lake Superior Iron Ore Association, through Jean Paul Muller, its attorney, has filed on behalf of thirty-six mining companies, a protest asking for the suspension of various tariffs which seek to increase the rates on iron ore from mines in Michigan and Wisconsin to Ashland, Wisconsin, and Marquette and Escanaba, Michigan. This protest shows that, effective February 25, an increase is proposed in the line haul rate of ten cents and in the dock handling charge of five cents, for the Chicago & North Western, Chicago, Milwaukee & St. Paul, and Minneapolis, St. Paul & Sault Ste. Marie. The line haul increase is five cents and the dock handling charge five cents for The Duluth, South Shore & Atlantic, Munising, Marquette & Southeastern, and Lake Superior & Ishpeming Railways. The protest reviews the iron ore rate situation, and calls attention to the fact that the rates at the present time are higher than they should be and are already before the Interstate Commerce Commission for determination in a formal case. It concludes with a request that the rates be suspended and the whole matter assigned for hearing. Protests have also been filed for the Jones & Laughlin Company, the Interstate Iron Company, Steel & Tube Company of America and McKinney Steel Company.

COPPER RATES.—In considering complaints filed by the Anaconda Copper Mining Company, the International Smelting Company and the American Smelting & Refining Company, the Interstate Commerce Commission on June 2 ordered the carriers concerned to establish rates on smelter products, including pig lead and lead bullion, in carloads, from points in the States of Washington and Idaho to destinations on and east of the Missouri and Mississippi Rivers, which would not exceed rates contemporaneously maintained from points in the States of Montana, Utah and Arizona, to destinations on and east of the Missouri and Mississippi Rivers. In compliance with a petition filed by the defendants the commission has now reopened this matter for further hearing and vacated and set aside the operation of its order.

TONNAGE STATISTICS.—A statement just released by the Interstate Commerce Commission, showing a summary of freight commodity statistics of all the large roads in the country for the quarter ended September 30, is illuminating as to the amount of tonnage which products of mines furnish to the carriers. During this period there were 17,672,592 carloads of revenue freight carried by the railroads, of which 7,205,790, or approximately 47.8 percent, were the products of mines. Translated into tons we find that out of 628,045,169 tons of 2,000 pounds each 346,040,830, or approximately 55 percent, were the products of mines. These figures include both anthracite and bituminous coal, coke, iron ore, other ores and concentrates, base bullion and matte, crude petroleum, asphaltum, salt, clay, gravel, sand, stone and miscellaneous products of mines, but do not include refined petroleum and its products, pig iron, nor manufactured iron articles. The nearest class of freight to this tonnage shown by the mines is under the head of miscellaneous, with 5,430,733 carloads for the period, and next in line comes products of agriculture, with 2,215,180 carloads.

CAR LOADING.—The drive instituted by the railway executives, when the lines were returned to private control, for a heavier loading per car has already shown results. During November of last year the average load carried in each loaded freight car was 30½ tons, a new record exceeding the previous record by two-fifths of a ton and exceeding the preceding month, which had been heavy, by one-half ton. This was done in spite of decreased traffic, and is an indication of increased efficiency. In November, 1918, the loading was one ton less, and in 1919 it was 4.3 tons less. In July and August, 1918, an average of 30.1 tons was reached, but the 30-ton mark was not again passed until September of that year. The carriers estimate that an increase of one ton in the average load per freight car is equivalent to the addition of approximately 60,000 cars, and by using these figures we arrive at the fact that there were 258,000 more freight cars available because of increased loading in November, 1920, than in November, 1919.

SOME EFFECTS OF NATIONAL AGREEMENTS AND GOVERNMENT OPERATIONS

Four employes paid $9.364 in back wages because titles of their jobs are changed.

Employe laid off because of lack of work receives, when re-employed, $1,000 for back pay and overtime.

Train delayed an hour and a half, and workman paid for five hours time, for thirty-minute job. Four men engaged four hours and thirty-three minutes collect for one-hundred and twenty-five hours. Five machinists who work eight hours each for three days are paid straight time for the twenty-four hours they work and time and one-half for the seventy-two hours they don't work.

Agreement that certain employes who check in and out on their own time be paid for one hour extra each week cost the railroads $6,500,000 in six months.

Substitution of straight time system for piece work makes a man take 1.47 hours longer to paint an engine and 27.89 hours longer to paint a freight car, and in many shops cuts output 26 per cent.

Number of shop employes jumps 47 per cent and amount of their wages 180 per cent.

Number of clerks increases 29 per cent and their wages 112 per cent.

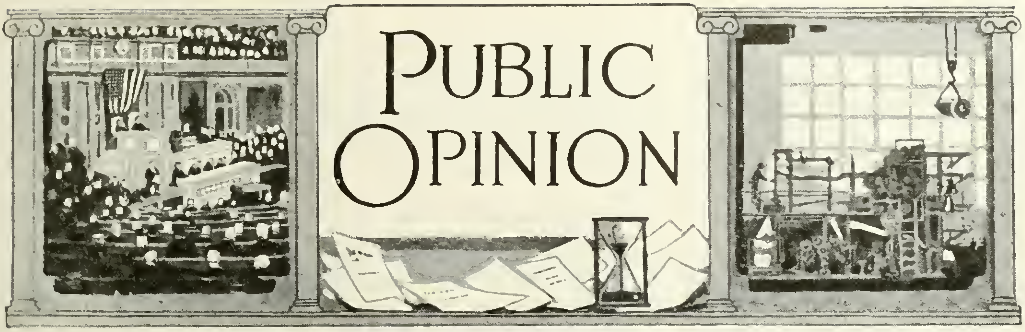
Number of maintenance of way employes increases 126,000 and their wages 112 per cent, or $256,000,000.

INTERSTATE VERSUS INTRASTATE RATES.—The Interstate Commerce Commission continues to hand down decisions in the various investigations started for the purpose of ascertaining whether rates required by state authority are prejudicial and discriminatory against interstate commerce, and the finding in every instance has been that where the rates intrastate are lower than the rates prescribed by the commission in the recent advanced rate case, they, the intrastate rates, are unduly preferential and prejudicial and unjustly discriminatory against interstate commerce. Several of these decisions have already found their way into court, and so far the courts have been universal in upholding the decisions of the commission, the latest instance being in Illinois, where the United States District Court enjoined the state from interfering with the orders of the Interstate Commerce Commission. The whole matter will ultimately come to the Supreme Court, and at the present time it looks as if the case brought by the Wisconsin authorities will be the first one to be argued and that fifteen or twenty of the other states will join with the attorney general of Wisconsin in presenting this matter. The feeling is quite general that the Interstate Commerce Commission will be upheld, and it is quite probable that the drive will then center on Congress for an amendment to the Interstate Commerce Act.

DETENTION OF CARS.—For the purpose of ascertaining what rules should be adopted for the reconsignment of freight the commission has required all carriers to submit, on a special form, a statement showing by commodity the number of cars held beyond the free time for reconsignment, for which the shipper was responsible, at principal reconsigning points and in large cities. Information as to the number of days each car was held, the classes of freight involved, the number of order notify shipments and similar data, is also requested.

COST AND TONNAGE OF RAILROAD FUEL IN 1920.—In connection with its investigation of the cost of railroad fuel in 1920, which the commission is making pursuant to a resolution of the Senate, a questionnaire has been sent to all carriers asking for detailed information as to the cost and quantity of fuel purchased in 1920 and 1919. The commission requires this information (1) as to bituminous coal and (2) as to other fuel, and details showing whether the coal was contract coal or made on spot purchases, the invoice price, and the total cost at the mine.

CONSTRUCTION AND REPAIR OF RAILWAY EQUIPMENT.—The carriers have, from time to time, issued statements in reply to the brotherhoods' charges now being investigated by the Interstate Commerce Commission that railway equipment was being repaired in outside shops at a cost greatly in excess of what similar repairs would come to in the shops of the carriers, with the inference that some of the officers or directors of the railways were personally interested in such shops. For instance, the Atlantic Coast Line has had practically twenty locomotives rebuilt by the Baldwin Locomotive Works, the contract for the first ten being made during federal control with the full concurrence of the regional director in charge. As to these locomotives, the Coast Line officials say that the efficiency of their shops was decreased not less than 30 percent during federal control by the abandonment of piece work, the forced obligations of the closed shop, and by successive federal interpretations of the rules and regulations governing shop control and operations. These conditions brought about the necessity for this outside repair work, and the further statement is made that no director nor officer of the Coast Line has any direct or indirect interest in the Baldwin Locomotive Works. When the government took over this line there were 112 engines out of service requiring repairs, and when federal control terminated there were 202. The Chicago, Milwaukee & St. Paul Railway reports that it had work done at the Baldwin Works on twenty locomotives and that there was involved a class of work which could not be done as economically in the home shops.



GOVERNMENT INTERFERENCE IN BUSINESS AS VIEWED BY LEADING LAWMAKERS

THE PROGRAM of investigation for evidence upon which to base government control of big business has been going merrily forward. The bill for the control of the packing industry led to some interesting discussions as to the value of government control.

Senator McCumber, in a speech in the Senate upon the subject, said:

"I agree with that Harding philosophy which says: 'More business in government and less government in business.' The people are tired of being governed by bureaus and by commissions. When I recall the effect of the control of our railways by the government; the effect of the operation of our Shipping Board, the awful extravagance, the more than awful inefficiency that was exercised, I want to get away just as far as I can from commissions and go back to a government by law rather than a government by bureau, board, or commission. Government control and operation of railways bankrupted every railway in the United States, increasing the cost of transportation to an unheard-of extent, is primarily responsible for the present excessive cost of living. Government interference in the operation of coal mines has raised the price of coal beyond the reach of the public to pay, and except for providential interference in the form of a mild winter the suffering of the public would have been shocking. I insist the right, the logical, way to effect a remedy is to declare by law that any wrongful act shall be a crime, and then punish the violation. I would govern business by law and not turn it over to a commission to manage, knowing that their management is never efficient or economic."

FOLLOWING this same line of reasoning, Senator King voices his unalterable objection to government control and regulation of business. In part he said:

"Unfortunately we are accepting the unsound view that the people are incapable of looking after their own affairs, that they have become so enervated and devitalized that government officials and government flunkies and government bureaus are needed for their guidance and protection. There is an effort to apotheosize the federal government, to degrade the states, and to destroy the confidence of the people in themselves and in their capacity for self-government. We need apostles who will preach the doctrine that animated the founders of this republic, that inspired the Declaration of Independence and fired the hearts of the men and women who crossed the Atlantic and battled with powerful forces and menacing foes to establish liberty and the right of conscience and local self-government and self-determination and it is time that the American people should awaken to the fact that it is not coddling by the federal government that is needed, but that the future rests with the people themselves.

"Theodore Roosevelt preached the doctrine of the strenuous life as against the sloth and ease and lassitude which will result from the substitution of the government for the individual. There is nothing that so enervates the people as persistent governmental interposition in their individual affairs. Our greatness depends upon the assertion of a true and rational individualism, upon the recognition of the fact that the people themselves have the capacity for self government and for evolutionary development. Individual and national growth will not result from federal rules and regulations and 'cut and dried' policies based upon bureaucratic formula. No attempt must be made to place the American people upon a procrustian bed, built by national authority, and to commit to federal officials the right to determine whether we are too long or too short, whether our views conform to a uniform plan and a fixed and inexorable scheme, prepared by governmental authority. A static situation usually is the desire of officialdom. Uniformity is regarded as the goal of excellence and perfection by some, and they would rejoice to see all individuals and nations cast in the same mold."

NOTWITHSTANDING the general opposition to the creation of new government bureaus, there is frequently urged by men high in business life the creation of additional boards and bureaus. Jerome J. Levy in a recent article in the New York Journal of Commerce advocates that:

The federal government appoint a permanent board having the confidence of the laboring classes, whose function shall be to fix the relative scale of wages and the working conditions covering the labor employed in the various industries of the country. The rate of wages shall be based upon the labor, skill and danger involved in the occupation. Once the rate is determined, it should become the law of the land, equally binding upon employer and employee, with adequate penalties to insure its enforcement. The principle underlying the suggestion is that each man should be able to buy back from the common fund of wealth produced that part which he has contributed to it, and therefore its determination rightfully belongs to society and not to any individual or group of individuals.

The results of the above, according to Mr. Levy, would be:

1. To reduce the present antagonism between capital and labor.

2. To prevent strikes, for, as the determination of the rate of wages will not lie with the employers, it is hardly conceivable that any body of men will strike against society.

3. To put every industry and ever investor, irrespective of location, on the same competitive basis with regard to its labor.

4. To prevent excessive rises in prices based upon claims that wages had been advanced, or labor was inefficient, as was the case last year.

5. To obviate the necessity of delegates with their abuse of power, also the existence of dishonest labor leaders and employers.

6. To do away with child labor and woman labor under certain undesirable conditions.

7. To maintain the rate of wages at a time as at present, where it is absolutely necessary that the purchasing power of the country be maintained in order to preserve old values, and restore confidence.

8. To prevent depression, for, with wages standardized, commercial loans will show if merchandise is going into consumption or accumulating on the market.

AMONG THE INTERESTING addresses presented on the floor of the Senate against the bill to regulate the packing industry and primarily directed against government control of industries was that of Senator Fernald, who said:

"I believe this bill is merely the entering wedge for similar legislation for all private business engaging in interstate commerce and will be a long step in the direction of the nationalization or socialization of all private industry. It strikes at individual initiative and personal ambition. It is not a governmental function to meddle in private business as long as that business is conducted honestly and fairly, and government meddling is contrary to the history of this country and everything that has contributed to its greatness.

"This measure means bureaucratic government for the packing business, and I am going to predict that it also means the same kind of government for all large business. If the bill becomes a law a group of men will be put in control of an industry which is the most sensitive to the law of supply and demand of any in the country, and the commission will have greater power than was ever before conferred by Congress. It will have power to legislate, to prosecute, and judge, and it may soon hamper the industry so as to affect the meat supply of the nation and even of the world."

CONSIDERATION by Congress of the various bills proposing the confiscation of big business has called forth considerable opposition by the press of the country. The Boston News Bureau has the following to say on the subject:

"On both sides of the ocean it is correctly insisted that the hand of government be lifted from the doing and the controlling of business—which it does so ill. Yet this is the time chosen for further or new experimentation here along such lines, in the way of 'regulation.'

"The Kenyon bill is passed with motives asserted to be in the interest of both the cattle-raiser and the meat-eater. By some magic it is expected that government will be able to raise the price of cattle, yet further cheapen the price of meat; and do it by hampering the very business mechanism which, by its form of organization, has done so much to achieve efficiency and economy.

"Now the Calder bill proposes to single out one industry, coal, and give to certain parts of the federal government almost autocratic powers over it, at their own discretion as to necessity.

"The world has been made supposedly safe for democracy. Now is the process one of making democracy unsafe for business?"

ALONG THIS SAME LINE the *Washington Post* in one of its issues comments upon the statement by Senator Elkins of West Virginia, attacking paternalism and government interference in private business. In part he says:

"It is a subject which has drawn forth pointed comments from the best brains of the country, and it may now be accepted as a fact that business men generally are opposed to the government interfering any more than is necessary with business affairs.

"That there must be regulatory laws in the public interest is conceded, as, for instance, the Sherman anti-trust law. Without that statute it would have been impossible for the government to put a stop to the orgy of combination and price-fixing which held full sway a few years ago until the Northern Securities decision brought it to a close. There are other regulatory acts which serve to prevent big business from imposing upon the public.

"But the tendency is now to go to the other extreme and authorize the government to practically take over certain lines of business.

"During the war circumstances compelled the government to intrude into private business, and representatives and senators readily voted for the operation and control of the railroads, for the Lever Act, for the establishment of the food and fuel administrations and for similar acts as war measures. Then it was a question of necessity. The government had to have transportation and supplies to the fullest measure. There was no question of economic policy involved.

"The government's incursions into the realms of business have not been marked by conspicuous success. From virtual ownership of railroads to running war workers' hotels in Washington, the result was the same—dislocation of business, stupendous waste and economic chaos.

"The interests of the American people must be conserved, but in doing this all possible freedom should be left to private business when it does not encroach upon the rights of the public."

ECONOMY which started with the people has finally made itself felt in no uncertain way in Congress. Senator Frelinghuysen in an address on national policy of economy said:

"In the reorganization of government departments we have a great problem to solve which should not be beyond American ingenuity or the constructive genius of the Republican Party. The Department of Labor should be reorganized and socialism eliminated. Millions of wage earners are out of employment. To offset this condition we must enact a tariff law which will cover the difference between the cost of production here and abroad, which will not only stimulate our manufacturers but protect our labor and its standards, not forgetting to enact laws which will prevent the destruction of those industries which have been wrested from Germany and established during the war and which were non-existent prior to the war. There is a middle ground by which we may harness the vast energies of American labor and the productive might of American capital to the task of making America supreme among all the nations of the world in productive capacity. The Republican Party has received a mandate not only to reconstruct the executive departments and our entire governmental administration upon a more business like and efficient basis, but to so revise the laws as to make them harmonize with the foreign and domestic needs of a country which has grown tired of arbitrary impediments to commerce and to the free expression of its intelligence, and a mandate to maintain our position as the first nation of the world."

THE GROWING TENDENCY of Congress to provide facilities for governmental competition with private enterprise has called forth very bitter criticism of this policy by members of the House and Senate who are opposed to the government's entering upon any enterprise which can be successfully carried on by private capital. SENATOR KING of Utah, in discussing the nitrate bill, said:

"I think that experience has demonstrated that economies are not obtained by governmental ownership and operation. The recent experience of the government in the manufacture of airplanes, ordnance, and other products, where the government literally spent billions of dollars, only shows a lack of achievement and waste and inefficiency. Of course, there are some undertakings which must be controlled by the government. But even those matters which are purely of a governmental character are controlled and directed at great cost and with results entirely disproportionate to the benefits derived. The frightful expense of bureaucracy and government operation and control of business is revealed in substantially everything which the government undertakes. We have in this country a bureaucracy which puts to shame the bureaucratic forms which we so often criticize in other countries, and if the federal government, in addition to the discharge of legitimate functions of government, shall undertake business operations and engage in commercial activities the army of federal employees will be increased beyond number and the oppressive burdens of the present and the past will be regarded as but silken threads measured by the heavy clanking chains which a triumphant bureaucracy will press upon the people.

"Democracy means a government of the people, not a government of officeholders for and by officeholders. A democracy does not mean a government which controls the private business of the people or which enters into those fields of activity which must, among a progressive and enlightened people, engage the efforts of individuals.

"I have repeatedly declared that if trusts and combinations in restraint of trade and organizations for the curtailment of production and the destruction of competition were permitted to go unchecked, it would force a change in our economic policy and lead to the assertion by the federal government of a drastic and perhaps oppressive control over the private enterprises of the American people. The Sherman anti-trust law and the Clayton Act and the Federal Trade Commission Act, if vigorously enforced, can do much to free the fields of private endeavor and of business activity from combinations in restraint of trade or which seek to prevent competition. Those who violate the law should be prosecuted and fined and imprisoned, and offending corporations should be dissolved."

IN AN ADDRESS before the Chamber of Commerce of Cincinnati, SENATOR POMERENE made some interesting remarks upon business adjustment. In part he said:

"The government cannot guarantee prices in time of peace. It cannot insure values. It ought not to attempt the impossible for one class unless it does for all classes. Paternalism by government in our involved situation seems to some extent to be necessary; but it does not follow that paternalism should monopolize the field of financial or industrial activity.

"I am firmly of the opinion that the expansion of our currency and our credit has gone almost, if not quite, to the limit. Any further expansion is liable to take us off a gold basis and give us a paper currency. If those Senators and Congressman who are seeking to take away the safeguards which protect our financial system will go to their home legislatures and persuade them to reduce the rates of interest to a point which borrowers can afford to pay, they will serve their constituencies better than by the course they are pursuing.

"Every thinking man who has studied economic conditions must realize that the period of high prices through which we have been going cannot continue forever. Readjustment must come.

"I would not have you think that I am pessimistic as to the outlook. I am an optimist. I look upon present conditions as one of the results following the world cataclysm and temporary in character. The same fine, indomitable American spirit which prepared for and largely aided in the winning of the world war for civilization and humanity will conquer in the face of present economic difficulties. A little of the spirit of give and take, by producer and consumer, by employer and employee, and a new era will dawn. The preachers of fads and fancies, of unrest and anarchy, may be heard for a little while, but they will melt away before the sober second thought of the country like mist before the rising sun. This is now and always will be the best land in all the world."

Mining and Petroleum Digest

COAL MINING PRONOUNCED A HEALTHY OCCUPATION.

COAL MINING is not unhealthy, according to conclusions reached by statisticians of the large insurance companies. The *Retail Coalman* publishes an article along this line which effectually combats the old idea that coal mining was decidedly injurious to health. Miners' asthma is rarely found in American coal mines today. The Prudential Life Insurance Company of America has conducted investigations which show that this ailment is not caused by breathing excessive quantities of coal-dust. In a series of mortality charts covering the experience of people exposed to dust of various kinds and contracting tuberculosis of the lungs and other respiratory diseases, it is shown that the death rate of men between the ages of 25 and 44 who were exposed to mineral dust was only 41.1 per cent. Men working in coal mines are included in this classification. The mortality rate for men exposed to animal and fiber dust is 49.7 per cent and the rate among men exposed to vegetable fiber dust is 49.5 per cent, whereas that among those exposed to general organic dust is 43.1 per cent, the rate in each instance being higher than that which prevails among coal miners.

The same company gives figures of industrial losses per $1,000 pay roll in the state of Pennsylvania. The losses in concrete construction amounted to 29.4 per cent, losses in anthracite mining amounted to 27.7 per cent, but the losses from accidents in bituminous mining was only 16.2 per cent, or less than those occasioned by accidents in logging, stevedoring, carpentry, open hearth steel work, blast furnaces, masonry, shipbuilding, saw mills and quarrying.

Figures gathered by the Metropolitan Life Insurance Company showed that the coal miner's average age at death is 3.4 years greater than the average of any of the following: bookkeepers and office assistants 36.8; railway enginemen and trainmen 37.4; plumbers, gas fitters, steam fitters 39.8; compositors and printers 40.2; teamsters, drivers, chauffeurs 42.2; saloonkeepers and bartenders 42.6; machinists 43.9; longshoremen and stevedores 47; textile-mill workers 47.6; iron moulders 48; painters, paperhangers and varnishers 48.6; cigarmakers and tobacco workers 49.5; bakers 50.6; railway track and yard workers 50.7; coal miners 51.3; masons and bricklayers 55; blacksmiths 55.4; farmers and farm laborers 58.5.

The average age of death for the above occupations is 47.9 years, whereas the average age of coal miners at death is 51.3 years. The coal miner's age at death is not only greater than the average in this classification but is greater than that of any persons included in this classification except mason and bricklayers, blacksmiths and farm workers.

The article in the *Retail Coalman* concludes with the following epitome of investigations conducted by the league of Red Cross societies, in which the relative dangers of coal dust and other characters of dust are discussed:

"Some kinds of dust are much more dangerous than others, a notable example being the difference between the effects of coal dust and silica particles. The silica particles, when they enter the lungs, set up a fibrosis, or fibrous condition of the tissues, which lowers the resistance to tuberculosis; hence it is that men in metal mines are liable to contract the disease. But coal miners, who live in about as dusty an environment as could be imagined, seem to thrive on the air that they breathe. Formerly is was explained that the minute particles of silica or similar substances were hard and sharp, and therefore more dangerous. But the coal dust is also often hard and sharp. When silica dust is mixed with coal or clay dust it becomes relatively harmless. Medical men, seeking an explanation for this, have found that there is a difference in the manner in which the lungs rid themselves of dusts of different kinds. Silica dusts are retianed by the lungs, while the coal dusts and soot seem to have some stimulating effect on the lung cells, and are promptly gotten rid of. In other words, when coal dust is breathed it is coughed out again or otherwise ejected through the nasal or mouth passages, while silica dust remains in the lungs and tends to render them less resistant to infection by tubercle bacilli.

"As a matter of fact, coal dust appears even to have a somewhat beneficial effect; coal miners as a class have a low tuberculosis rate. It is not known whether this 'good dust' has some peculiar antiseptic property, or whether it causes a biological reaction tending to aid him who breathes it in his resistance against tuberculosis. The practical application of these discoveries comes in the fact it now is suggested that in order to avoid the bad effects of quartz dusts, the attempt be made—not to get rid of the dust, but simply to mix with it a neutralizing dust of the coal or soot nature. Probably it will be possible, by adding coal to the dust that cannot be disposed of otherwise, to render it harmless; and just as stone-dusting is used in coal mines to prevent coal-dust explosions, so coal-dusting will be used in quartz mines to prevent miners' phthisis."

PLUTOCRATIC COAL DIGGERS.

SEVENTY-FIVE DOLLARS A DAY is a pretty good wage, and would probably be so admitted by every walking delegate and professional labor economist in the land. And that is exactly what Mr. Dan Lytle, of Ohio, earned between the rising and the setting of the sun a few weeks ago. Of course, this is an exceptional instance, but that it is not altogether an isolated one is shown by the circumstance that Mr. Lytle earned $382 for two week's work, and by the additional circumstance that Mr. Henry Menke, of Kempton, Md., earned $690 in one month. The *Washington Post*, in a dispatch from Cumberland, Md., carries the following account of Mr. Lytle's achievements:

"What is believed to be a record wage for a day's work was made last week by Dan Lytle, of Ohio. Lytle, employed at Kendall mine No. 1, of the Anderson Coal Co., mined 33.17 tons of coal in one day. The wage rate is $2 a ton with yardage additional, giving the man $75 for one day's work.

"In the first two weeks of November he drew $382. Coal at the mine is shot."

The following press dispatch from Kitzmiller, Md., gives an account of Mr. Menke's work and reward:

"Henry Menke, a miner employed by the Davis Coal and Coke Company at Kempton, is believed to have made the record among diggers employed along the Western Maryland Railway. In the first half of November he drew $356 in his pay envelope, and for the last half he was paid $334, a total of $690 for the month."

REDUCED COAL OUTPUT ADVOCATED

REFUSE TO PRODUCE until there is a market, is the advice given coal operators by the *Black Diamond*. After viewing the unsatisfactory situation as respects demand for coal, the publication concludes there is a demand for real courage on the part of the mine owner—courage to shut up shop, so to speak, until customers become more in evidence. Under the caption of "The Shortest Way Home," we read:

"The fight in the coal industry today is a fight for a market that will yield a profit. There is no market when sales of coal involve losses. The industry should fight to establish a market and at the present time the only way to establish a market is to refuse to produce coal that is not needed for present consumption.

"It takes a fighter's bravery, sometimes, to shut down mines, but it is a fighter's bravery that is needed. The public has not reached the intellectual level to date where it realizes that to produce coal that is not needed is to dissipate national wealth. We have long been a nation to talk conservation and to practice waste. The time has come when we must reverse the program, practice conservation and talk waste out of existence.

"There should be no consignment coal going to market. There should no longer be coal sold for freight. It is only cowards in the industry who have not the moral courage to close their operations when they have no profit-bearing orders to absorb their output. Such men are their own worst enemies as well as the worst enemies of the industry and the nation.

"Nineteen-twenty-one will reward fighters, but it will show no mercy to cowards. What the industry does as a whole during the next few weeks will determine the measure of its prosperity or adversity during the remainder of the year. If it measures production for the present by the needs of the present, it will establish a permanent prosperity that will justify the cost. If it foolishly floods the market with unabsorbable coal it will pay the penalty of a demoralized industry which it will take years to reconstruct."

COPPER FINANCING

SALE OF $40,000,000 short-term notes to finance American copper, now held as surplus without a market, has been proposed and, as might be expected for such a revolutionary project, has been the subject of lengthy discussions in financial circles. The proposition is handled by the *Journal of Commerce*, Chicago, in the following manner:

"The manner of handling the transaction is interesting. The National City company and Guaranty company, both New York investment organizations backed by strong banking institutions, will underwrite $40,000,000 8 per cent notes to run from one to three years. These will be distributed to individual investors and corporations all over the United States through bond selling organizations.

"Security will consist of the 400,000,000 pounds of copper which is held by various companies until such time as the export demand improves and arrangements can be made for its sale to foreign countries. As added backing for the issue there will be the personal guarantee of payment by the leading copper producing interests of the country.

"Under this arrangement the copper will be carried at 10 cents a pound valuation, which is about 3 cents below the current market rate. The metal under the terms of this financing, however, must be ear-marked for foreign consumption, as the provisions of the Edge law granted the privilege of agreements as to price and supply to combinations for export trade only.

"As far as the copper industry is directly concerned, the pooling of the 400,000,000 pounds of copper should have a salutary effect. An interest points out that it means virtually the passing from visible to invisible supply of a large quantity of copper for several years, and the requirements of the United States must come from new production, which is now being turned out at a very much reduced rate.

"Thus the mines will be permitted to again resume output and extend operations, as the copper surplus is no longer overhanging the market, but is a reserve stock from which to draw for supplying the European requirements, as the demand improves."

MOVING A WHOLE CITY

BIG THINGS are always in order in these latter times, and the mining industry is doing its share of them. Its latest contribution to the category of the colossal consists of the removal, bodily, of a whole city from a point overlooking extensive mineral deposits to a point where the subsurface is not so valuable. The scheme seems like sacrilege to the *Princeton* (Minn.) *Union*, which says:

"Hibbing is moving—that is, all her buildings are being transported a distance of a mile and a half to another site so that the Oliver Mining company, which owns the mineral rights underneath the village, may dig down into the bowels of the earth and remove the iron ore. The moving process will consume a couple of years. It looks like sacrilege to virtually shove this beautiful village—of which its inhabitants were so proud—aside merely because of the cupidity of man, and convert its site into a yawning abyss, but the property owners had no alternative. The steel trust is king. While the new Hibbing will in course of time doubtless attain a greater magnitude than the old, many years will necessarily roll along before it can even duplicate the streets, boulevards, sewers, lights, water mains and other municipal utilities, which it is estimated will cost $15,000,000."

SOUTHERN IRON ORE DEVELOPMENT

A NEW CHAPTER may be written in the history of Southern mineral activities, if the expectations indulged by certain north Georgia owners of ore properties are realized. The *LaFayette*, (Ga.) *Messenger* tells about it:

"Eastern capitalists are preparing to test the iron ore fields around Estelle and along the T. A. G. Railroad in Walker and Chatooga counties. The property is owned by Chattanooga people, and tests will be made by drilling and will be begun at once. The capitalists have options to purchase, which they will probably exercise if the field shows up well.

"It is said that the ore fields should yield 30,000,000 tons of iron ore and a tremendous development is going to happen if the fields show up well. The erection of a blast furnace would be one of the developments of the near future."

MANGANESE IN ALABAMA

SELMA IS EXCITED over the discovery of manganese in its immediate neighborhood. That the excitement has somewhat of a substantial basis is seen from the consideration that actual sales of the ore have been made to the Birmingham steel mills, which are only a short distance away. The *Manufacturers' Record* carried the following account:

"The discovery of manganese ore in the hills near Plantersville, Dallas county, about 20 miles north of Selma, followed by the sale of 10 car loads of the ore to Birmingham steel and iron interests, has aroused keen interest among residents of the section where preparations are now being made for developing the mining of the mineral. Representatives of various iron and steel companies are on the ground making investigations as to the quantity and quality of the ore, which is found in the chain of hills west and north of the Southern Railroad track and extend in a northwesterly direction, being a continuation of the Red Mountain range of Jefferson county where rich deposits of iron ore abound, and which furnish large quantities of raw product for the Birmingham plants.

"Morgan Richards, secretary of the Selma Chamber of Commerce, advises the *Manufacturers' Record* as follows regarding the discovery: "The outcroppings of this ore is in a stretch 8 or 10 miles long. No borings have been made developing the depth of the deposits, but we are now in correspondence with the state geologists with this end in view."

"The ore that has been shipped so far has been scrapped from the top of the ground on the hillsides, and what lies beneath is purely a matter of conjecture. The necessary materials for dynamiting have not been received, and it will be some time before a scientific survey of the fields can be completed. It is believed that the recovery of the values from the ore will not be difficult, and it is said that samples thus far have assayed about 22 per cent of mineral, a good showing for rock deposit of this kind."

PLATINUM MINE

ARKANSAS possesses what may prove to be the largest platinum mine in the world, according to the belief of some investigators whose findings are chronicled in the *Commercial Appeal* (Memphis, Tenn.). The article states that an assay of the ore taken from the field near Batesville lends strength to the hope that the Arkansas Mine may be of great value. The press dispatch follows:

"What may prove to be the largest platinum mine in the world has been found near here," says N. A. Stratton of Denver, Colo., who arrived in Independence County to make an investigation of the mine discovered by Pat Adams, near Sulphur Rock.

"Mr. Stratton is a chemist of international reputation and one who produced some of the most powerful explosives used during the late war, and his presence in this section is due to a recent trip made by one of the owners of the Sulphur Rock mine, who went to Denver with about 400 pounds of ore to have it assayed, and while in Denver met Mr. Stratton. When the mineral was assayed it proved to contain a very large amount of platinum. After his assay Mr. Stratton arranged to visit this section for a further inspection and to get samples fresh from the mines. He gives out the statement that the former assays made by a number of assayers, as well as himself, from over the United States are correct."

CHUNKS OF PLATINUM ore brought back from Russia have been used for door weights and as playthings for children in northern Michigan. A press dispatch from Cadillac, Mich., tells about it:

"Chunks of ore brought back from north Russia by soldiers of the Polar Bear expedition have been assayed and found to be almost pure platinum.

"Nelson Nolf of Harriette brought back several pounds of the glittering lead-like metal and it is believed he will realize about $18,000 on his find. Platinum is worth $200 an ounce. One young man from Marion found a piece the size of a wheat kernel and received $6 for it.

"The soldiers found the ore on the Dvina river, about 35 miles from Archangel. The metal was found while clearing a space for drilling.

"The ore Nolf found has been used as playthings by the children. One Cadillac man used a piece of the ore for a door weight. Every time the door was jarred open several dollars were knocked off the platinum."

WORLD'S INTEREST IN MINING

CIVILIZATION DEPENDS in goodly measure upon mining, as Floyd W. Parsons points out in the *Saturday Evening Post*, Mr. Parsons deplores the slump in the metal mining industries, saying, in part:

"Civilization has been developed on a metallic basis, and the miner has been the real pioneer of industry and empire.

"Just now we are much disturbed by the slump that has taken place in our metal mining industries. From a time of unusual prosperity, caused by the war, the metal mining industry has settled down to a period of dullness and readjustment.

"Of the many problems the mining industry is now facing none are more important than the questions of tax reform, blue-sky legislation, standardization, a protective tariff and operating costs under new freight rates. In the matter of state mine taxation the metal producers are on solid ground in their contention that the so-called *ad valorem* basis of taxation for mining property is not economically sound as comparable to the same basis of taxation for real estate holdings or agricultural lands. When the miner produces the ore it becomes of value, is sold and thereafter can never be of value to that piece of property again. A mine can only show income by depletion of its fixed value, while a farm not only yields an annual crop providing a yearly income, but at the same time is likely to show an increase in land value which is not affected by the return from the annual harvest."

Conducted by John Boyle, Jr.

1,362,968—*L. P. Steward*, Idaho Springs, Colorado, Dec. 21, 1920.

Ore Sampler.

1,363,760—*E. F. Caldwell*, Dec. 28, 1920.

Ore Separator comprising a movable tray, screen therein, and means for producing a compound movement of the screen, said movement being partly in the line of the tray movement, partly oscillatory in a horizontal plane, and partly a vertical movement.

1,363,970—*G. Grondal*, Djursholm, Sweden, Dec. 28, 1920.

Leaching Apparatus comprising a set of vats with curved bottoms placed in succession at different levels, swinging arms for moving the ore from one vat to the next higher vat, filters at the bottom of the vats and conduits leading therefrom to vats of a lower level.

1,363,990—*G. W. Morthland*, Lead, South Dakota, Dec. 28, 1920.

Ore Grinding Machine comprising a rotary casing, disks of progressively decreasing thickness towards the discharge end and of different diameters, disposed within the casing, said disks being adapted to rotate relatively to one another when the casing is rotated, each of said disks being provided with a central opening forming a continuous passage through the said disks and having their confronting faces provided with radially extending grooves.

1,364,304—*C. L. Perkins*, Pittsburgh, Pa., Jan. 4, 1921, assigned to Metals Recovery Company.

Flotation Process which comprises adding to the pulp a small amount of a substantially non-oleaginous organic mineral collecting agent which is substantially non-frothing.

1,364,305—*C. L. Perkins*, Pittsburgh, Pa., Jan. 4, 1921, assigned to Metals Recovery Company.

Flotation Process which comprising adding to the pulp a small amount of an organic nitrogen compound containing two nitrogen atoms joined to each other.

1,364,306—*C. L. Perkins*, Pittsburgh, Pa., Jan. 4, 1921, assigned to Metals Recovery Company.

Flotation Process which comprises adding to the pulp a small amount of a hydrazin compound.

1,364,307—*C. L. Perkins* and *R. E. Sayre*, Pittsburgh, Pa., assigned to Metals Recovery Company, Jan. 4, 1921.

Flotation Process which comprises adding to the pulp a small amount of an organic nitrogen-sulphur compound.

1,364,308—*C. L. Perkins* and *R. E. Sayre*, Pittsburgh, Pa., assigned to Metals Recovery Company, Jan. 4, 1921.

Flotation Process which comprises adding to the pulp a small amount of a thio-urea substance.

1,364,858—*C. L. Perkins*, Pittsburgh, Pa., assigned to Metals Recovery Company, Jan. 4, 1921.

Flotation Process which comprises adding to the pulp a small amount of a substantially non-frothing, non-oleaginous, organic mineral collecting agent, subsequently adding an agent having good frothing properties and subjecting the mixture to flotation.

1,364,859—*C. L. Perkins* and *R. E. Sayre*, assigned to Metals Recovery Company, Jan. 4, 1921.

Flotation Process which comprises adding to the pulp a small amount of a substantially non-frothing, non-oleaginous organic nitrogen sulphur compound as collecting agent, subsequently adding an agent having good frothing properties and subjecting the mixture to flotation.

1,364,903—*W. M. Thomas*, New York, N. Y., Jan. 11, 1921.

Coal Cutting Machine, the combination with a machine base and shoes arranged one at each side of the center of the base, of a rocker for each shoe, each rocker being pivoted to the machine base, a shoe engaging block carried by each rocker and arranged to engage the corresponding shoe, and means for oscillating the rockers.

1,364,991—*John Hayes, Jr.*, Philadelphia, Pa., Jan. 11, 1921.

Concentrator comprising a box movably supported in a downwardly inclined position, riffles mounted transversely of the box and raised above the bottom thereof, jarring mechanism to cause the heavier constituents to move upwardly under the riffles and a structure for enclosing certain of the riffles at the upper end of the box to retain the heavier particles.

1,365,281—*Walter A. Scott*, River Forest, Ill., Jan. 11, 1921.

Flotation Process comprising forming in the pulp bubbles containing a substance capable of reacting chemically with a substance contained in the pulp, thereby forming a flotation agent, and separating the bubbles with the solids adhering thereto from the remainder of the pulp.

1,365,598—*C. S. Oldroyd*, Knoxville, Tenn., Jan. 11, 1921.

Mining Machine comprising a rotatable neck having an axis which is relatively stationary and horizontal, means for actuating said neck, a cutting tool, devices for moving said tool on said neck at right angles to and toward and from the axial line of the neck and means extending along the axis of said neck for transmitting motion to said cutting tool independently of the movement of said supporting members.

1,365,822—*J. H. Gallup*, Denver, Colorado, assigned to the Gallup Shale Process Co., Jan. 18, 1921.

Vertical Oil Shale Treating Retort.

1,365,881—*Albert Ball*, Claremont, New Hampshire, Jan. 18, 1921, assigned to The Jeffrey Mfg. Co.

Mining Machine comprising a flexibly fed, off-set position mining machine having a shoe on which it is normally fed along the mine bottom to cut a kerf adjacent the floor of the mine, and an auxiliary shoe on which said mining machine may be mounted and with which said mining machine may be flexibly fed and flexibly positioned for cutting a kerf at a higher level.

1,365,922—*N. E. Katz*, Meridian, Miss., Jan. 18, 1921.

Recovering Sulphur in Sulphur Ores which consists in heating the ore in an auto clave in the presence of water to a temperature sufficient to melt the sulphur by means of the generated steam.

1,366,087—*M. E. Layne*, Memphis, Tenn., Jan. 18, 1921.

Well Screen comprising a perforated casing having grooves therein adjacent to the perforations, said grooves gradually deepening toward the perforations and a helix of screening wire wound on the casing, the strands of which are adapted to fit into the groove.

1,366,371—*E. M. Erickson*, Ray, Arizona, Jan. 25, 1921.

MINER'S LAMP.

1,366,456—*J. S. Highfield*, London, England, Jan. 25, 1921.

METHOD OF MINING CLAY consisting in forcing a liquid in a stream against a clay face, collecting the resulting liquor in a collecting vessel and returning said liquor in the stream against the clay face until a desired degree of concentration of clay suspended in the liquor is attained passing the liquor into a settling plant, adding a relatively small percentage of an electrolyte to the liquor, allowing the liquor to settle and then pumping the liquor to a treating plant for extracting the clay from the liquor.

1,366,651—*Harry W. Hardinge*, New York, N. Y., Jan. 25, 1921.

GRINDING MILL comprising a rotatable hollow drum having an outlet portion whose interior is frusto-conical for automatically classifying the material according to size on rotation of said drum and provided with outlet means for discharging fines at the periphy a conical section of said frustum, and a plurality of cone shaped members loosely mounted within said outlet portion of said drum and with their smaller end toward the outlet opening.

1,366,660—*E. B. Hoover*, Walla Walla, Washington, Jan. 25, 1921.

ORE SEPARATOR.

1,366,766—*J. M. Callow*, Salt Lake City, Utah, Jan. 25, 1921. Assigned to Pneumatic Process Flotation Company.

PNEUMATIC FLOTATION CELL. The process of preventing the blanketing of a permeable septum forming the bottom of a bubble flotation separator, consisting in subdividing the pulp body longitudinally of the separator into a series of bodies having closely restricted communication only in the plane immediately above the permeable bottom, and creating in each body in proximity to the points of communication, eddies adapted to scour the surface of said bottom and transport material having a tendency to settle on said bottom through the separator.

1,366,767—*J. M. Callow*, Salt Lake City, Utah, Jan. 25, 1921. Assigned to Pneumatic Process Flotation Company.

ORE FLOTATION comprising a pulp receptacle, means for forming substantially uniformly distributed bubbles within the tank and means for exhausting the bubbles from the upper surface of the pulp.

PATENT OFFICE "SWAMPED"—LARGER FORCE NEEDED

THE YEAR 1920 brought to the Patent Office its biggest business in number of applications filed. There was an increase of 43 per cent over 1918 and of 7 per cent over 1919, which itself had smashed all previous records. The increase in trade-mark applications was 27 per cent over 1919 and 126 per cent over 1918. Total applications, including designs, labels and prints, were 54 per cent greater than in 1918 and 10.4 per cent greater than in 1919.

The work of the year was also greater than that of the year before by the following percentages: number of drawings made for inventors, 20 per cent; drawings corrected, 13 per cent; deeds recorded, 35 per cent; words of manuscript, 46 per cent; photographic copies of drawings, 20 per cent; photostat copies furnished, 20 per cent; printed copies of patents distributed, 25 per cent; letters written, 9 per cent.

Activity was especially marked in the trademark division. There were 10,282 trademarks registered as compared with only 4,208 in 1919. The increase over 1919, which was a normal year, was 144 per cent. The increase in design patents granted was 63 per cent, and in registration of labels and prints 50 per cent.

In publishing the report of the Commissioner of Patents for the year, the Secretary of the Interior calls attention to the limited force and extra work which is being done in the Patent Office. He points out that on February 15 there were 40,000 applications for patents piled up awaiting examination. Handling of these applications alone will amount to as much work as was done during the entire year of 1900. At the present time an application for a patent is handled about seven months after it is received. The Secretary of the Interior says that work is still piling up and that unless a remedy is provided work at the Patent Office will lag behind even more in the future.

Patent Office receipts increased during 1920 to the extent of $262,876.54. The increase amounted to 10 per cent. The favorable balance earned was $107,850.50, but if the bonus, which is not charged to the Bureau in any appropriation, be omitted from consideration, the net favorable surplus amounts to $327,776.69.

The Commissioner of Patents, in asking for a larger force and somewhat higher salaries, has called attention to the favorable balance in Patent Office receipts.

MINING MAN APPOINTED TO WAR FINANCE CORPORATION

E. A. HAYES, of California, who is president of an iron company and also interested in gold mining and newspapers, was appointed early in February a member of the War Finance Corporation. His appointment, and that of W. W. Warwick, comptroller of the treasury, completed the corporation's personnel. Mr. Warwick was secretary to W. H. Taft when the latter was a circuit judge. Mr. Hayes was a member of Congress from 1905 to 1919.

NOVEMBER REFINERY STATISTICS.—Gasoline production in November, 1920, approximated 452,000,000 gallons, Bureau of Mines calculations. The daily average was 15,088,000 gallons, or 62,000 gallons more than that of October. Kerosene production increased 300,000 gallons daily and lubricating oils 32,000 gallons. During the month there were in operation 326 refineries with a daily capacity of 1,698,295 barrels. This was a decrease of six refineries and an increase of 1,350 barrels daily capacity as compared with October.

INDUSTRIAL NOTES

The Raleigh-Wyoming Coal Company, of Charleston, West Va., announces the removal of its offices from 801 Virginia Land Bank Building to Room 212 Professional Building, corner of Quarrier and Broad Street, Charleston.

The Hendrick Manufacturing Company, of Carbondale, Penn., has opened an office at 915–916 Union Bank Building, Pittsburgh.

The Adamson Manufacturing Company, East Palestine, Ohio, has added a new department for the manufacture of all kinds of storage, pneumatic and pressure tanks, welded pipe, battery casings, evaporators, condensers and a large line of arc-welded products.

The Denver office of the Jeffrey Manufacturing Company has been removed from the First National Bank Building to 421 United States National Bank Building.

The Jeffrey Manufacturing Company has issued catalogue No. 257, on standardized scraper conveyors. The catalogue features single and double strand conveyors for all industries, including mines, power plants and coal yards.

Catalogue No. 280 on "Mine Fans" has been issued by the Jeffrey Manufacturing Company of Columbus, Ohio. In addition to many interesting illustrations and descriptions of the "Stepped-Multi-Bladed" and other types of fans, this catalogue contains valuable data, formulas, and other information on mine fans and mine ventilation that will enable those interested in the ventilation of mines to solve their problems in a highly efficient manner.

Pump Data No. 62 and Pump Data No. 63, have been issued by the Aldrich Pump Company of Allentown, Pennsylvania. The catalogues contain twenty-four and eight pages, respectively, of cuts, tables and descriptive matter.

ALASKA CHAPTER MEETS

BUSINESS AND PLEASURE were combined at a meeting of the Alaska Chapter of the American Mining Congress on January 14 at Fairbanks. Authorization was voted for continuance of the drive begun earlier in the year to enlist the enthusiastic co-operation of all the chapter's members, and good results are expected. A six-reel motion picture entitled "Safety Methods in Metal Mining," produced by the Bureau of Mines, was shown.

REVISED LEAD OUTPUT REPORT.—Latest Geological Survey figures give the 1920 lead production of the country as 483,000 tons, instead of 511,000 tons, as first reported, and the increase over 1919 as 40,000 tons instead of 68,000. Southeastern Missouri's production was 155,000 tons instead of 183,000.

The

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CLOUDING THE ISSUE

IT IS ALLEGED by the leaders of organized labor that the open shop movement now in progress is not in favor of an open shop but—

"the campaign is one for a shop that shall be closed against union workmen. It is primarily a campaign disguised under the name of an 'open shop' campaign, designed to destroy trade unions and to break down and eliminate the whole principle of collective bargaining which has for years been accepted by the highest industrial authorities and by the American people as a principle based upon justice and established permanently in our industrial life."

The MINING CONGRESS JOURNAL insists that this is not a fair statement of the situation. An open shop is a shop in which union and non-union workers may be employed without any discrimination by the employer against either. A closed shop is a shop in which either union or non-union workers are barred from service. A closed shop against union workers and a shop closed against non-union workers are equally closed shops, equally un-American, equally contrary to the best interest of the nation. The principle of collective ba gaining lends itself to the closed shop idea although it is not essential thereto.

The term "collective bargaining" as applied in the present day and in conjunction with the closed shop is equally misleading. The MINING CONGRESS JOURNAL believes that the American employers, as a whole, believe emphatically in the open shop and have no serious objection to collective bargaining. They do object to the closed shop and to collective extortion.

They do object to the demand of organized labor that no non-union worker shall be employed. They do object to the Union Labor idea of collective bargaining which demands that its terms shall be accepted, or that the plant will not be allowed to operate. Organized labor says—"Employ only members of the Union at a wage scale which we fix, under conditions which we determine, or we will take from you the right to use your plant which constitutes its essential value. We cannot take your property but we can destroy its value until you meet our terms." And this is called collective bargaining by organized labor. Until collective bargaining shall mean a voluntary agreement between the representatives of workmen on one side and the representatives of employers on the other; until it shall mean a real bargain; a real meeting of minds; this fair-sounding term with its sinister motives; this wolf in sheep's clothing; this disguised highwayman must expect, and will receive bitter opposition.

The acceptance of such a proposal by an employer of labor is not a bargain, collective or otherwise, but is a surrender to an extortionate demand.

In the open shop only can the American workman preserve his independence and only in real bargaining upon terms to which both sides agree can labor hope to secure the best results. An open shop is not a closed shop and no amount of assertion will make it so.

CHEAP COAL AND NATIONAL GREATNESS

CHEAP COAL has been one of the most important factors in making the United States the greatest nation in the world. This greatness is based first, on an enterprising and intelligent citizenship under a government which secures to its citizens the greatest freedom possible, subject only to such restrictions as are necessary to protect the rights of others. Successful effort whether of brain or brawn is entitled to receive the highest price which it can command. In the subduing of the forest, the development of the farm, the building of manufacturing plants and in every field of human endeavor the individual is given the greatest liberty of action and the fullest right to the benefits created by his effort.

As industry progressed to a higher state of development, inventive genius, capital and management with full opportunity to profit by its success, changed the old time hand production to the immense manufacturing plant where co-operative effort brought to the lowest point the cost of production. The earlier manufacturing plants were built at points where water power could be developed. Later, the development of machinery, calling for the use of power at points where water power was not available, developed the steam engine and in turn, the coal industry.

In the United States during all of these years coal has been furnished to the consumer cheaper than anywhere in the world where it is used on a large scale. Cheap coal as applied to beneficial use, requires first, that coal shall be cheaply produced, and second that it shall be cheaply distributed. Cheap coal in the United States was one of the elements which made transportation service cheaper and more effective than in any other country of the world.

For many years prior to the war, the intense competition between coal producers resulted in the sale of coal at the mine for less than the actual cost of production. For six years prior to the war the average price of bituminous coal throughout the United States at the mine was $1.12 per ton. Of this cost, ninety-six cents was paid for labor and supplies. The margin of sixteen cents per ton was called upon to meet the overhead costs, amortization, the interest upon capital, the selling costs, the value of the coal in the ground and the continous hazard of mine accident which might easily wipe out the entire investment.

When the war broke out, the bituminous coal industry as a whole was on the verge of bankruptcy. A few large companies with keen foresight were increasing their bonded indebtedness, and buying up the holdings of their bankrupt neighbors, and gradually, the process leading to a great trust in coal was in operation.

The Sherman Law, backed by the power of a great government, threatened every combination, either reasonable or unreasonable, by which economies might be effected and the dangers of bankruptcy avoided. Coal company after coal company went into bankruptcy, the larger combinations perhaps increasing their production, but the net result being that notwithstanding the immense number of mines opened as new ventures, there was a less number of mines in operation in 1915 than in 1910, and those remaining in operation, were struggling with each other to secure possession of the larger markets at prices which yielded no profit.

With the opening of the war came a demand so great as to require a maximum production of coal, that maximum being greater than it was possible for the railroads to transport. The price of coal was doubled and trebled at the mine, the cost of production being also doubled and trebled, not only by increasing wages, but by inefficient workmen, and by the fact that wages were so high that many miners who did not need to work but three days a week to support their families, deserted their posts for the remainder of the time. War conditions created a demand greater than the supply and high prices was the natural, the inevitable result.

The average price for which coal has been sold during the last four years has not been greater proportionately than the average price of all other public necessities. The business of coal mining, like every other business, always responds to the law of supply and demand. The lawyer who can command a ten thousand dollar fee seldom accepts a ten dollar fee. Few preachers who can command the comparatively higher salaries of the large city churches are found in the country parishes at six hundred dollars per year. The man owning the only bearing peach orchard adjacent to a city market is sure to ask a higher price for his peaches than if all other orchards in that community produced a full crop.

Congress has had under consideration a bill for the regulation of the coal industry. It proposes by increased restrictions to furnish cheaper coal to the consumer. The restrictions during the war increased the cost of coal. Any governmental restriction which interferes with the operation of the law of supply and demand, will increase the cost of coal to the consumer, and will create a coal famine should any great emergency arise. The law of supply and demand is the only law which will produce satisfactory results. Any business with a production capacity fifty per cent. greater than possible consumption can be trusted, if unhampered, to supply its product at the cheapest price possible. Patrick Henry once said, "I have no lamp to guide my feet except the lamp of experience." If legislative committees will devote themselves to constructive legislation and permit the law of supply and demand to operate, the consumer will get cheaper coal, the coal business will be in a more satisfactory condition and the nation will profit.

THE TAKING OF LOSS

THE BUYERS STRIKE is nearing its end. It has served an exceedingly useful purpose. Its reasons were based in necessity, or in anticipation of a necessity which would make impossible the continuation of living expenses upon the high price levels of the war.

Railroad managers have at last discovered that the present high level of transportation rates has so largely decreased their earnings that even drastic reduction of the number of men employed leaves them still with great operating deficits. They have discovered that the government guarantee of a rate which will return $5\frac{1}{2}$ per cent. upon invested capital cannot accomplish its purpose.

The requirement of the Esch-Cummins Bill that the Interstate Commerce Commission should fix a rate for transportation service which would produce a net income of $5\frac{1}{2}$ per cent. upon the invested capital of the railroad has demonstrated its utter futility. Transportation service, like all other kinds of service responds eventually to the law of supply and demand.

The railroads realize that traffic has fallen off and that a further increase in rates will still further restrict the transportation service from which their profits must necessarily be derived.

The buying public is unwilling to continue paying war prices except for the barest necessities. It becomes necessary, therefore, for every line of business to meet the inevitable and take the loss entailed by the descent from the high to a lower price level.

Railroads have desired to make the same profits during the adjustment period that are expected in normal times. Capital has insisted on selling its high cost surplus goods at a profit. Labor has insisted on maintaining high price wage levels built up during the war.

Notwithstanding the several protests against the inevitable, prices are being reduced, wage levels are being reduced, and transportation costs will be reduced and must be reduced before business can again resume its normal conditions.

WATCH YOUR STEP, GOVERNOR

IF GOVERNOR THOMAS ERBY KILBY of Alabama is not exceedingly careful, he will be placed at the head of the list of those whom President Samuel Gompers desires to defeat. As arbitrator of a coal strike, he not only decided against the strikers on every point, but included in his decree of award the following:

"Since this strike was wrongfully and without the slightest justification called, the organization of the United Mine Workers of America is responsible for the present strikers being without employment, and therefore the organization, should support the strikers until they find work."

The principle involved in the recommendation is old, but the application is new. When strikers win, there frequently is included in the settlement a provision for retroactive increased pay, by which means operators are made to bear in part the losses sustained by the workers. When the union in which workmen place implicit trust is itself solely responsible for their plight, it is altogether just that it be compelled at least to provide the strikers with the necessaries of life while they are idle.

Unions have always opposed the suggestion that they be required to incorporate and held financially liable for damages inflicted during strikes upon employers, and for a very manifest reason. If Governor Kilby's suggestion finds favor, they will have another and still more potent reason.

RAILROADS AND COAL

THE TWO MOST IMPORTANT FACTORS in the development of industry are power and transportation. Transportation is impossible without power and power would be futile without transportation. Transportation is of such a nature as to require that it shall be largely a monopoly and recognizing its monopolistic nature the American people have wisely arranged for governmental regulation. Even with the general acceptance of the fundamental necessity for governmental regulation, the Interstate Commerce Commission has had great difficulty in so directing the transportation affairs of the nation as to give entire satisfaction. There are, however, substantial basic reasons why the railroads of the nation should be under governmental regulation. There are equally potent reasons why the power resources of the nation should not be under governmental regulation:

First, there are three different power-producing agencies—coal, oil and water power. These sources are naturally competitive. Second, coal by itself is available in thirty-nine states of the Union, the character of the mines, their proximity to point of use and the quality of the coal all differing from each other and from all others in some one, if not in many particulars. Third, the coal resources in the United States are owned by more than one hundred thousand separate individuals, prohibited from combination by the Sherman Act, and even without this prohibition there would be no human possibility of making coal production a monopoly. The very many reasons which exist for governmental regulation of railroads do not exist in connection with governmental regulation of coal production.

Again, even though the conditions were the same, what logical argument could now be advanced to favor such regulation? The railroads of the United States, at all times subject to governmental regulation, were actually operated by the government during the war period. At this time the transportation rates are more than double what they were prior to the war period.

A large part of the increased railroad rate is a fixed charge against the public. The price of coal is so low as to justify a leading coal trade paper recently to issue a frantic appeal to the coal operators to shut down their mines rather than to fill freight cars with coal subject to demurrage charges where no users were ready to purchase the product. Coal prices will regulate themselves if left free from federal interference.

HAWAII COMPLETELY CIVILIZED

ONE OF THE MOST INTERESTING things in a recent report of one of the government departments is an account of a strike which took place last year in our pianissimo possession, Hawaii. The plantations have a wage scale based on sugar selling at four cents a pound. When the price of sugar rose, the planters of their own accord announced a general wage bonus corresponding to the percentage of increase in the price of sugar. The only condition was that laborers should remain on plantations a year and work twenty days a month before becoming entitled to the bonus. During 1919 the bonus was 90 per cent. and for the first six months of last year it exceeded 500 per cent. Nevertheless, during this latter period several thousand plantation laborers on the island of Oahu struck for a fifteen-day month. They remained idle five months, when they returned to work upon the old basis.

The only comment necessary upon this little episode is found in the heading to this article.

PREPARE TO GO TO CHICAGO

AN EXPOSITION OF MINES AND MINING equipment will be held in Chicago next October in connection with the twenty-fourth annual convention of the American Mining Congress. The governments of the United States, Canada and Mexico will probably send exhibits. Several Western States have definitely decided to do so. Even at this early date it can be plainly foreseen that this exposition will be a World's Fair in so far as the mining industry is concerned, that it will amount to a revelation in its portrayal of the almost limitless degree in which civilization is dependent upon the mining industry.

Every man knows a little about minerals in a general way. He recognizes that bedsprings and automobiles, gas-pipe and coal are rather useful commodities, and is regularly reminded by the movies that fortunes have been made from gushers and mother-lodes and glistening nuggets. But he does not know that bonanzas are encountered in fiction more often than in the field, that the real mineral wealth of this country lies under mountains and plains and river-beds mixed in microscopic proportions with other substances absolutely worthless, and that it yields to discovery and segregation only by modern scientific methods which it has taken the world thousands of years to develop. And he would undoubtedly stare in wonderment if you told him that there are approximately eight-hundred mineral substances found in the United States and that every article of his clothing, every implement in his shop or on his office desk, every moving picture he looks at, his favorite newspaper, the pies his mother makes and the chromo of his best girl are absolutely dependent for their production upon from one to a score of these minerals. But such are the facts.

Education is one of the most potent factors of life and happiness. Knowledge is power. Chicago is one of the wonder cities of the world, situated at the exact transportational center of the two countries whose citizens are the most intensely educated and still the most eager to learn. More than two-score of the men who have helped to make of Chicago a wonder city are working together to make the National Exposition of Mines and Mining a complete setting-forth of North America's mineral resources and absorbingly interesting to all who enter the portals of her Coliseum. They, and Chicago, can be depended upon to make it as enjoyable and as complete and as final as a derby or a world's series or the last Presidential election.

Every merchant who contemplates a buying trip, every tourist, every scientist, every one who desires to secure a big, comprehensive grasp of mining, the biggest industry in the world, should write "Chicago, October 17-22," in his or her date-book, and straightway wire for hotel reservations.

ALASKAN COAL DEVELOPMENT

IT IS ANNOUNCED by the Navy Department that it's Alaskan Coal Commission hopes to have its building, construction and installation of mining equipment completed by June 30 next. This announcement is made after an investigation begun last July to determine the probable quality of coal in the Chickaloon coal district of the Matanuska coal field, transportation facilities to tidewater, and the location of terminal facilities to place the coal for Navy use. The enormous waste entailed by the use of Atlantic seaboard coals by the Pacific coast fleet, providing it is possible to supply a usable grade in Alaska, is apparent.

In the early days of the war, when transportation facilities were sorely needed for the supplying of those industries upon which the war was dependent, train load after train load of coal was hauled across the continent to meet the needs of the Pacific fleet because of the foolish handling of this situation by the federal government. We venture the assertion that the cost of coal produced by the government under the plans above outlined will be much greater than the highest cost charged by the most unconscionable profiteer who furnished coal to the government during the war. And yet the production of coal by the government seems to be necessary so long as the premnt governmental restrictions upon individual developseent shall continue. The Commission in its report states that the character of the country and the prospecting and leasing laws of Alaska "are such as to prevent prospectors from going in and discovering suitable fuel fields."

This being the case, there is no remedy for the government except to develop its own coal supply and what is to become of the people of Alaska, remains a problem.

There is much effort from the Washington end to show the large development likely to take place under the government leasing law. The MINING CONGRESS JOURNAL will watch with interest these possible developments and may some day be ready to admit that the public lands leasing system is a public advantage. Thus far there is no proof and we are still of the opinion that the leasing law is a mistake; that the federal government has no business to interfere in the development of mineral resources of any state; that its interference will stifle development, and will keep from the state vast properties which should come under its taxing power for the support of the state institutions. More than all this, it will effect a centralization of power in the federal government contrary to the spirit of the Constitution and dangerous to a republican form of government.

It is refreshing to find a government agency admitting the fact that the restrictions of the leasing law as applied to the Alaskan situation are such as to prohibit individual development.

BANK ADVERTISING TO PROMOTE BUSINESS CONFIDENCE

BANKS have long been progressive. They were among the first classes of great business concerns to recognize that their own growth and enhanced profits depended upon the prosperity of the entire community in which they were located. Many going concerns can trace their present stability to credit extended by banking houses when such credit demanded a faith in the borrower and his business whose basis was not altogether apparent. But it is not often that even a bank rushes to the aid of an entire industry which is in the deepest doldrums and spends its own good money to disseminate cheer and optimism. But out in the unprecedented West —where no one hesitates to do a thing merely because it has never been done before—is a bank which is doing this very thing. The Bank of California, in display advertisements in daily newspapers, has been cheering up the West with this message:

"The West pours from its mines a diversity of minerals which not only form the basis of our nation's wealth but also the backbone of the industrial life of the land. The demand for such wealth will always exist and it will always be the fortune of the West to contribute its share to meet the demand.

"There is every reason for the business concerns and individuals of the West to face the future with confidence and courage and a determination to take advantage of the opportunities that a return to a state of healthy prosperity holds in store."

This is a striking example of progressivism, and likewise a striking declaration of faith in the mining industry. Wherever it reaches, it should counteract the pessimistic preachments of those who see no way out of the slough of despond in which the world has been wading. Coming from a bank which has been closely identified with mining for many years, it should create a feeling of security and optimism among operators and investors. But above all, it serves as a timely reminder that the problems of all business, big and little, and of all individuals, employers and employes, are mutual problems, and that there can be no real or permanent prosperity which is not apportioned among all the sections and all the people, share and share alike. The Bank of California is a public benefactor.

McFADDEN BILL ENDORSED

ELSEWHERE in this issue an editorial from the *Financial Age* of March 12, entitled, "To Conserve Gold Production," is reproduced. It is unusual to find a financial editor who has so comprehensive a grasp of the problems confronting the gold mining industry, or who sees so clearly the need for protecting the gold reserve and maintaining a normal production of the metal.

ECONOMY, CONGRESS AND THE PEOPLE

TWO NOTABLE STATEMENTS have been made recently by men in the public eye, one by Secretary of the Treasury Mellon and one by Secretary of War Weeks. Each related to a subject of first importance to the country, that of economy, a subject more frequently discussed than almost any other. But a remarkable thing about the statements of the two cabinet members was that each emphasized an aspect of the economy problem which most people entirely overlook and which few statesmen have the courage to mention.

Secretary Mellon said:

"The people generally must become more interested in saving the government's money than in spending it. A thoroughgoing national budget system must be established, and the government's expenses brought into relation to its income."

Secretary Weeks said:

* * * If Congress were not more economical than the administrative branch of the government, or the people themselves for that matter, we would have a deluge of expenditures and extravagance greater than we have yet known."

After all, this IS a representative government. Senators and Congressmen reflect the thoughts, the habits, the desires of their constituents. The average constituency persists in regarding the United States treasury as a repository of other people's money, and the delight which every man experiences in having a good time at the other fellow's expense is universally recognized. Give the average constituency an appropriation for making Catfish Creek navigable or adding a wing to the post-office and the leading citizens will hold a home-coming celebration in honor of their Congressman and roll up an unprecedented majority for him at the next election. They seem not to realize, or to regret, that he had to join forces with some five hundred other statesmen equally bound to satisfy grasping constituencies and vote for an omnibus bill carrying millions of dollars of wasteful appropriations in order to "put across" their own particular favorite scheme.

Economy, like patriotism, must be practiced, and not merely preached. The government is heavily burdened and the people are sorely taxed. From every quarter comes the demand for curtailment of public expenditures, and yet there is an equally audible and decidedly more insistent clamor for new government departments, "social justice," bonuses, additional offices and government aid for every conceivable kind of project. All too frequently the demand for economy and the plea for new expenditures are traceable to the same source and the former is merely the smoke-screen for the latter.

Congress will become economical when the people become economical, when they realize that the business of government is their own personal busines and that the federal treasury is a repository of their own personal funds. Then, perhaps, they will cease demanding the dredging of old swimming holes, the construction of Greek temples for village post-offices and the payment of salaries to political friends. And when the demand ceases the supply will cease and the government will be economically administered.

THIS EXPLAINS IT

IN THE MARCH ISSUE of The MINING CONGRESS JOURNAL, page 114, first column, was a short item entitled "Bureau of Mines Turnover," showing that 190 of the Bureau's 401 employes left the service last year. It showed also that of the 119 technical men employed, 66 resigned. Perhaps you wondered why? If you did, and are still curious, read the article in this issue, page 154, column one, entitled "Assistant Oil Shale Engineers Wanted By Mines Bureau," and you will know why.

FOREIGN DIVISION FOR THE AMERICAN MINING CONGRESS

AS A RESULT of a conference of representatives of a number of influential national organizations held in New York City, March 10, 1921, The American Mining Congress has been asked to formulate plans and to initiate a program which will enable The American mining operators to be fully informed in regard to mining developments in foreign countries.

In creating a Division on Foreign Affairs, The American Mining Congress will attempt to correlate information in regard to foreign mineral resources and production which is being secured by various governmental agencies and it will seek to digest and disseminate this information among American mining operators.

The primary purposes in the development of this work will be to protect American mining interests in the development of home production and to protect American capital in those foreign countries which furnish opportunities for successful mineral developments where the local market will absorb the increased production.

Such investments are bound to be an important factor in the progress and extension of the activities of American industry, for they furnish a basis for the utilization of American organizing ability abroad and create additional markets for American mining equipment and machinery.

In addition, the Division on Foreign Affairs of The American Mining Congress will make it a special point to develop a close contact with the representatives of foreign governments and to secure full information in regard to legislation in foreign countries affecting the investment of American capital, with the aim of preventing any discrimination against American interests.

In view of these facts, it is expected that the work of the Division of Foreign Affairs of The American Mining Congress will eventually provide one of the most valuable services rendered by this organization.

THE RAILROAD CRISIS

THE RAILROADS are unable to obtain adequate capital. Never in the history of the country has it been so difficult to secure new funds, without which the entire system must become seriously impaired. Primarily, this is due to the unprofitable condition of the industry, with its deficiency of earnings to meet operating expenses. The 36 per cent. rate increase allowed the railroads was calculated to insure earnings on the present capital investment which would attract new capital to the industry. Under the pressure to which all industry has been subjected in this period of deflation, the last rate increase has proved to be more than the traffic can bear. Approximately 58 per cent. of the tonnage is supplied by raw mine products, which are derived from operations on a large tonnage scale, but usually with a very narrow margin of profit. An extensive contraction of the tonnage movement has consequently been recorded, with 400,000 freight cars idle. The high cost of freight transportation has probably diverted more tonnage to the motor truck in the short-haul districts of the East. Freight emanating on the Pacific Coast for Eastern delivery has also been diverted from rail to boat via the Panama Canal. What was calculated in the rate increase to be an asset to the railroads has under existing circumstances become a liability. On account of the operating deficit sustained by the roads during the first two months in the year, it must be evident that not only is the present rate more than the traffic can bear, but that the wage scale itself is more than the traffic can bear.

Under government control, a deficit was created by making the wage increase retroactive. The rate increase could not be made retroactive, and when made was not sufficient even with the heavier tonnage movement to produce adequate revenue. The difficulty has been due largely to the consideration of the labor constituent independently from that of the welfare of the properties as a whole. The fact has been overlooked that the broad interests of labor are served best by the adoption of policies which will insure the railroad investment and improve the railroad system. Conversely, whatever impairs the system is harmful to the interests of labor. Since the rate increase has proved an embarrassment to traffic, railroad rates should be reduced at the earliest moment. The Interstate Commerce Commission no doubt will be reluctant to exercise its authority to reduce the rate before a reduction in the wage scale is made, on account of the fact that it is also charged with the responsibility under the Transportation Act of insuring a $5\frac{1}{2}$ per cent. return on railroad investments. In the common interests of the railroads, the public and railroad labor, it becomes prerequisite that the wage scale be first reduced, with the understanding that the Interstate Commerce Commission will immediately reduce the rate in like proportion. This adjustment in the wage scale will make it possible for the railroads to maintain a normal volume of payroll. With the consequent recovery in the volume of tonnage, operating efficiency will be improved, upon which the interests of labor can best be served. No doubt the Railroad Labor Board realizes the acute situation confronting the roads and the necessity for an early decision from the national Adjustment Boards, in order that the wage cases may be taken up.

Senator Cummins has suggested that the railroad problem should be re-submitted for investigation. The subject needs no further investigation. Both the Interstate Commerce Commission and the Labor Board have had the subject under continuous investigation and are apprized of the facts upon which to make all necessary adjustments. Delay is the most serious menace in the railroad crisis. Prompt and decisive action by the Labor Board, followed by that of the Interstate Commerce Commission, is required to prevent further disintegration of the railroad system.

REMOVING THE DANGER ELEMENT FROM COAL MINING

COAL MINING is becoming more and more a safe occupation. The number of men killed last year per million tons of coal mined was only half that of 1907 when the first federal appropriation was made for investigation into the causes of mine accidents. The best of practical and scientific thought have of recent years been directed, and are still being directed, towards reducing to a minimum the hazards of the occupation. Mine owners, mine workmen and the United States government are co-operating to this end, and results already achieved lend encouragement to the belief that coal mining, once about the most perilous of callings, will soon be as safe as working on a railroad train or playing professional baseball.

A FIRST STEP TOWARD TREASON

CIVILIZATION with all of its blessings is absolutely and entirely dependent upon a stable government. A democratic government is one based on the will of the people, in which there must be a system by which that will becomes manifest.

The first great successful effort looking to democratic government in the history of the world adopted a constitution providing for three distinct co-ordinate departments, each with well defined powers. To Congress was given the power to make laws; to the President the duty of the execution of those laws; and to the Courts the final determination of the constitutionality of the laws which were enacted by Congress.

The Constitution was adopted for the purpose of protecting the right of each citizen, to "life, liberty and the pursuit of happiness." The power to grant an injunction was given to the courts in order that the rights of citizens might be protected against threatened disturbances by evil doers and law breakers.

To openly defy a lawful order issued by a court of competent jurisdiction is to defy the authority of the Government.

A recent declaration of the American Federation of Labor is as follows:

"The revival of the unrestrained use of the injunction" also imperils the stability of our economic structure. For six years the Clayton Act, accepted on all sides as the established law of the land, to an appreciable degree checked the abuse of the writ of injunction. A majority of the Justices of the Supreme Court has swept away this strong barrier against a feudalistic legal concept and labor finds itself again at the mercy of an unlimited use of judge-made law. The injunction as it is now used and abused in labor disputes is without sanction, either in the Constitution or in the fundamental law of the land.

It is pure usurpation of power and authority. The only possible and practical remedy in the face of a power, so usurped and so completely unjustified, lies in a flat refusal on the part of labor to recognize or abide by the terms of injunctions which seek to prohibit the doing of acts which the workers have a lawful and guaranteed right to do, or which seek to compel workers to do those things which they have a lawful and guaranteed right to refuse to do. This is the only immediate course through which labor can find relief and this course it purposes to pursue.. Labor realizes fully the consequences of such a course, but in the defense of American freedom and of American institutions, it is compelled to adopt this course, be the consequences what they may.

The audacity of such a statement is most astounding. If the President of the United States were to make such a statement he would be called upon to face impeachment charges, and Mr. Gompers may well thank the tolerance of the great American people that he is not called to the bar of justice to defend himself on a charge of treason. Undoubtedly this would be true in almost any other country of the world except the United States in which the Constitution has carefully protected the liberty of the individual by declaring that "treason against the United States shall consist only in levying war against them, or in adhering to their enemies, giving them aid and comfort."

According to the Cyclopedia of Law and Procedure,

"The expression 'levying war,' in the sense in which it is used in the constitutional provision defining treason, includes not only formal or declared war, but also any forcible opposition, as the result of a combination, to the execution of any public law of the United States. To constitute the crime of treason, under this interpretation of the phrase 'levying war,' there must be a combination of the following elements: (1) A combination, or conspiracy, by which different individuals are united in one common purpose; (2) a common purpose to prevent the execution of some public law of the United States; (3) the actual use of force, by such combination, to prevent the execution of that law."

It will be seen that the carrying out of this threat of a "flat refusal on the part of labor to recognize or abide by the injunction," made by the American Federation of Labor, through its mouthpiece, Mr. Gompers, will constitute the crime of treason as laid down by the Constitution of the United States which Mr. Gompers pretends to uphold. It will be well for organized labor to halt in the advocacy of principles which threaten the stability of our economic structure, and the very existence of Republican Government.

This is a government of law and not a government of men.

Pain generally follows a fall. But in the Interior Department they do it the other way.

Harding in the White House, Hoover, Hughes and Hays in the Cabinet. An H— of a government, verily.

The man who named it the income tax had a very distorted idea of direction.

The Bureau of Mines advertises for an oil shale engineer, salary $1,800. The appointee can secure first-rate housing accommodations in Washington for about $1,750.

The Supreme Court has decided that the government is entitled to a low gas rate. Now that Congress is about to re-assemble, let us hope that low prices in this instance will not have the usual effect.

R. C. ALLEN LEAVES LAKE SUPERIOR IRON ORE ASSOCIATION

ROLLAND CRATEN ALLEN, vice president of the Lake Superior Iron Ore Association, has tendered his resignation to become effective September 1, and thereafter will be with the Mining Department of Oglebay, Norton & Co., with headquarters at Cleveland.

Mr. Allen was appointed to the office of vice president of the Lake Superior Iron Ore Association in the fall of 1919 and has had active charge of important work in connection with taxation and rate matters pertaining to the interests represented in the association.

Mr. Allen is a geologist and engineer of broad training and experience. After graduating from the University of Wisconsin in 1905, he spent three years in graduate study and field work for the United States Geological Survey and private interests in the West, Canada, and the Lake Superior iron ranges. From 1908 to 1913 he was special lecturer in mining geology in the University of Michigan, 1909-1919 state geologist of Michigan, 1913-1919 appraiser of mines for the state of Michigan and technical advisor to the Michigan Securities Commission. During the war he served the government as a member of the tax advisory board, as chief mine valuer and head of the division of natural resources in the United States treasury.

In recent years Mr. Allen has devoted his attention chiefly to the economics of mining with special work in taxation and the theory and practice of valuation of mining property. He is a member of the Tax Committee of the American Mining Congress and of special committees of the National Tax Association and the American Institute of Mining and Metallurgical Engineers.

The announcement of Mr. Allen's connection with Oglebay, Norton & Co. follows that recently made by the company concerning the organization of a steamship company and the taking over of a fleet of lake vessels which makes it practically independent of other sources in the handling of iron ore from its own mines. The company recently moved its headquarters from the Wade Building to a suite of offices in the new Hanna Building, Cleveland.

ILLITERACY AMONG MINE WORKMEN

FORTY-SIX OUT OF EVERY HUNDRED mine workmen are unable to speak English, according to testimony given by a Bureau of Mines official before a Congressional committee. This official said there were one million mine workers in the country, of whom 620,000 were foreigners and of whom 460,000 could not speak English. Extirpation of illiteracy among them, he said, by enabling them to read danger signals and understand orders, would save annually one-thousand lives and $150,000 in damages.

PROBLEMS OF CONGRESS IN THE REVISION OF THE REVENUE LAWS

By Congressman James A. Frear

Written for the Mining Congress Journal

TAX EXPERTS differ in expertness when one school confidently says a tax is always passed on to the ultimate consumer while another school declares with equal confidence it is a question of fact in every case.

Again we are advised by experts of the first school that existing tax laws are unjust and inequitable because tax burdens are placed upon the rich and thus to a large extent destroy initiative, enterprise and business prosperity, notwithstanding in the same breath these authorities demonstrate that the tax is passed on to the ultimate consumer. From another school we are advised that taxes should be placed on the shoulders of those best able to pay and that any other principle violates the fundamentals of democratic government.

Experts and non-experts find common ground in the proposition that to a large extent ultimate consumers contribute toward support of the local and national government, whether they pay direct taxes or not, and through customs, rents and other means they help pay for city street paving, and national highways, and for salaries of local police, and likewise towards that of the President. It is possible that a layman may measure this contribution as accurately as the expert.

JAMES A. FREAR

Of Wisconsin, prominent member of the Committee on Ways and Means of the House of Representatives.

Legislators are accustomed to deal with an infinite variety of problems running the gamut of thousands of bills which are introduced in the respective branches of Congress every session. The 500 odd members of the Senate and House when dealing with tariff, taxes, appropriations and matter of domestic or foreign concern cannot say of them mathematically "two and two are four," nor do members spend unnecessary time in construction when determining the correct use of the verbs "is" and "are" providing the meaning is certain and the result is "four." Few measures reach mathematical exactness in legislation, for it becomes a matter of concession, of giving and taking, in order to reach final agreements among members who are influenced by economic, social, financial, political or other considerations, unlike tax experts, or other experts who, governed by their own reasonings and conclusions frequently find a great majority of the world hopelessly wrong. The fact that experts are seldom able to help bring about agreements among men or between legislative bodies may account for the further fact that such experts, however well informed, are rarely chosen to legislate.

Congress, so generously and frequently criticized by experts, is composed of men in every case chosen from 200,000 people or from the State at large because of presumed or assumed qualifications. Lawyers, judges and other men of affairs, often entering Congress after long experience in other legislative bodies, with extended training in examining experts, generally find respectable authorities on opposite sides of every important legal proceeding, possessed of diametrically opposite opinions, expressed with equal certainty and finality on the same state of facts. The situation with equal frequency arises in matters of legislation and members before acting are forced to weigh the financial or other influence, or character of employment, that consciously or unconsciously affects so-called expert opinion.

I have no purpose to defend Congress or legislation from criticisms by so-called experts, whether appearing in pamphlets, speeches, or editorial columns. The right to criticise the highest legislative body is given to every citizen however exalted or humble. But when the so-called experts express amazement or amusement because legislators refuse to swallow their conclusions without question it is well to understand the reasons for such refusal.

It is a certainty that Government expenses will reach figures for years to come several times larger than expenditures before the war. Pre-war prices and pre-war private or public business methods are not likely to return. Changed conditions will never revert to what we term "normal." Government appropriations are boosted by those who demand a great navy, a great army or military establishment, and by those who believe the government should have a direct hand in building highways from one end of the continent to the other, in dredging every waterway whether commercially usable or not, in erecting public buildings to "instill a patriotic love of country" in some cross roads village, and for hundreds of other activities that are pressed on Congress for federal appropriations. For every dollar to be expended there must be provision to meet the expenditure, and whether by direct or indirect taxation the volume of the burden is the same. Frequently those most insistent in urging generous appropriations for specific purposes are those who most vigorously denounce every form of taxation toward which they are obliged to contribute.

What then is the situation confronting Congress? We are advised by the Secretary of the Treasury that receipts for the fiscal year 1920 reached $6,694,565,388 (p. 410 annual report). Of this amount $3,944,949,287, or nearly 60%, was produced by income and profits tax. On the same page of the report expenditures for the same period reached $6,403,343,840, of which amount over one billion dollars was for interest on the public debt—an item that will not vary materially in the near future. Estimates for 1921 and 1922 appear as follows: Balance in Treasury June 30, 1920, $359,947,020; estimated receipts $5,799,758,375 and estimated expenditures $4,851,298,931, with public debt certificates of indebtedness maturing within a year of $2,509,550,500. The latter may be and probably will be largely refunded. Estimated receipts for the fiscal year 1922, according to the same authority, are $4,919,730,000, and disbursements exclusive of public debt $3,897,419,227. Uncertainty regarding expenditures makes the above estimates helpful but not re-assuring when practically every interest is demanding a reduction of taxation or a removal of the tax which is ordinarily reasoned should be paid by the other fellow. Paragraphers and cartoonists revel in the troubles of tax payers and insist upon repeal of various forms of taxation, without recommending substitutes not equally objectionable to the other fellow. In this they are in harmony with many tax experts. Tax legislation is easy to an embryo legislator but the longer he studies the problem the more fully is he made aware of objections under any plan that bristle when specific cases are considered.

Repeal the excess profits tax, take the tax off luxuries, reduce the higher bracket surtaxes and various other proposals are urged and strong arguments are offered for such action in every instance, but what tax is to be substituted with the least friction?

It is confidently urged by tax experts and non-experts that a turn-over sales tax or a final sales tax is the easiest way to make good the deficiency. That a tax spread out over a hundred million people would be easy to bear and relieve those who believe they are bearing undue burdens now. It looks simple on its face to place an insignificant tax on consumption and raise the coveted revenues by that means. It looks equally simple to fix a tax on the head of every man, woman and child in the country, and its ease of ascertainment would be certain—yet no one advocates the head or poll tax to raise a deficiency estimated in round numbers at one billion dollars, providing we repeal the excess profits tax on corporations and reduce the surtax on personal incomes as proposed by the former Secretary of the Treasury.

At this juncture, while clinging to a sales tax, some investigator finds that a final retail sales tax will produce insignificant revenues unless the tax rate is made so large as to be practically prohibitive. Difficulties of administration are also involved. A turn-over sales tax hardly finds headway in the hands of enthusiastic brokers seeking to escape existing tax laws before some tax expert demonstrates to a practical certainty that any turn-over tax gives such advantages to an "integrated" industry that many businesses will be wiped out because the tax on gross sales, absorbed to meet competition, would become prohibitive with the smaller concerns. A storm of protest is aroused also by trying to shift a tax heretofore paid out of profits of corporations over the backs of those least able to pay and whose percentage of tax burden compared with ability to pay is measured by the difference in circumstances of the two individuals taxed, whether it be Mr. Morgan or Mr. Rockefeller on the one hand, or the mechanic, dry goods clerk or farmer on the other. It is not a political argument, but one based on the recognized principle of taxing according to ability to pay; however, there is a political sequel that no man in public life will ignore if he expects to stay in public life

Again comes the tax expert who has warned the country that it committed a wrong in "taxing a soap bubble." Now that the bubble has burst as he predicted, and as everybody knew would be the case, he again rises to say tax collections will be far less than they were before and therefore a sales tax is inevitable. As long as he confines himself to generalities the arguments of such expert are elusive, but when he gets down to specific facts and figures, the sales tax balloon bursts as it demonstrates the difference between theory and practice.

For illustration, in a communication just received this expert refers to a prediction of October 9, 1920, wherein a foreign authority makes a statement to the effect that "there appears to be every reason that the French sales tax will produce a much greater amount than had been anticipated in the budget estimates." That sent out in March, 1921. Now for the hind sight on which revenue legislation must also depend. The estimated sales tax receipts in France for January, 1921, were 487,000,000 francs, and for February 413,000,000 francs, whereas the sales tax receipts for January as published by the press reached 187,000,000 francs in January and 151,571,000 francs in February, or about 37% of the estimates. Yet the communication referred to was sent to members of Congress March 15, 1921, with the worthless, disproved prediction. Legislators looking for light will hesitate to accept such bubble statements while preparing a revenue bill, sent by a tax expert who is 63% off in his assurance of returns when compared with the facts. If he did not know the facts, his ignorance in the role of an expert is inexcusable. If he did know and purposely misrepresents his responsibility is greater.

Congress has been called in session to pass a tariff bill and revise the revenue act. The first act will result in a readjustment of tariff schedules and increased income from customs estimated at $300,000,000, or about $600,000,000 in all to be received from customs. The plan to revise

THE GENTLEMAN FROM WISCONSIN

This unusually interesting and interestingly unusual contribution to the Mining Congress Journal is from the virile pen of one of the most vigorous and practical minded members of the House of Representatives.

James A. Frear, Republican, representing the tenth district of Wisconsin, has been returned to Congress for his fifth consecutive term. He has also served his state as Assemblyman, State Senator and Secretary of State. During the last eight years Mr. Frear has been prominently identified with agitation for a budget system of public expenditure, of which he is a confirmed exponent, and is becoming nationally known as an aggressive advocate of a safe and sane policy of tax revision. In a recent speech before the House he commented favorably upon the report of the Allied Tax Committee of the American Petroleum Institute, the National Industrial Conference Board and the American Mining Congress.

Mr. Frear, as a member of the Ways and Means Committee of the House, was called to Florida in February as a consultant of the President-elect in the pre-inaugural consideration of the revenue and other fiscal programs.

the revenue act includes a proposal first to repeal the excess profits tax and also to reduce personal income surtaxes. What is to be substituted for the loss of a billion dollars in estimated receipts from this plan does not yet clearly appear. It has been urged that we adopt the plan without any substitute and depend on reduced expenditures to prevent a deficit in 1922, but that is skating on thin ice and seems a doubtful policy to pursue.

A plan proposed by Treasury officials for a substitute tax is to add an increased tax of 5% or 6% to the normal tax of 10% on net profits of corporations, and that increase it is estimated would produce $300,000,000 in revenues. A further proposal is made to tax undistributed profits of corporations from 10% to 20% for the purpose of reaching profits that may otherwise be withheld from taxation. At 20% the tax is estimated to produce $190,000,000 and additional profits thus released and forced into personal income are estimated at $400,000,000 in additional revenues or a total of nearly $600,000,000 from this one tax. At 10% the receipts would approximate one half of $600,000,000 and it is argued that many corporations would frequently be willing to pay 10% rather than distribute profits. As distribution is optional the corporation could exercise its own judgment.

That would provoke protests from corporations which would find the tax gatherer dismissed from the excess profits window only to appear at the undistributed profits window after having collected an additional 5% normal tax. I am not discussing the merits of these proposals but do suggest that certain members of Congress will probably ask to be shown what substitute is acceptable before unqualifiedly surrendering the government income now received from excess profits, which, however, will admittedly be much reduced in 1922. Substitute proposals suggested have the merit of simpler administration, according to those who protest against lingering adjustment of excess profits returns. On the other hand it is contended that it is more just for us to tax excess profits which are only paid if excess profits are realized, than to fix a 15% level rate. Again I am presenting arguments without expressing opinion at this stage of the proceedings.

Providing surtaxes in the higher brackets of personal income are reduced because of present investments in tax exempt securities, what is the substitute for this loss? A measure introduced by Congressman Green, of the Ways and Means Committee, proposes to reach a large part of investments in tax exempt securities by requiring a return of all personal income and then have the tax exempt income entered under the lower rates, thereby forcing the taxable income into the higher surtax rates. It has been urged that if this bill is passed, and can run the gauntlet of the Supreme Court, it will meet with general approval from those who have not been spending 11 months of the year trying to escape taxation, as one sales tax exponent contended was the prevailing practice, and it will produce several hundred million dollars additional revenue annually.

Removal of the corporation exemption, increasing taxes on luxuries like cigarettes, on which one billion dollars were expended last year, and $750,000,000 on cosmetics, according to the treasury authorities; taxing land sales and brokerage sales; increasing admission taxes in view of the enormous increase in moving picture attendance and $2 rates for ordinary shows—these are among the proposals to help revenues. I have not urged these measures but they have been suggested for consideration.

It has been stated on high authority that a soldiers bonus bill will pass at the coming extra session. One senator has said that he believes interest on the $9,500,000,000 foreign loans will be realized within the next year or so and can be applied to that use. In reply to the contention that it will take three billion dollars or more to cover the soldiers bill, he says that amount could be spread over a series of years and not more than $400,000,000 will be required for the first year, with less amounts annually thereafter. In view of the obligation to soldiers and character of our foreign loans which they helped save from total loss, the plan of devoting interest from the loans to that purpose if practicable would be a popular method to adopt and save a heavy extra burden on the Treasury, and be more generous and equitable than to compel soldiers to pay a large part of a sales tax in order to secure a small stipend from the government.

Sales tax advocates have been hunting for a substitute name with which to conceal the detested term of "sales tax." So far, "salvation," "supplemental" and "security" have been considered, but abandoned because reminding of bent safety pins, while the title of "snatchum and skinum," suggested by a Western farmer, was dismissed after the second reading. Whatever Senate sugared title or House substitute may be selected it is certain to emerge the same old tax that was discarded many centuries ago by the Romans about the time their rulers stopped feeding Christians to wild beasts as a first step forward in the world progress.

POTASH IN 1920

POTASH PRODUCTION in 1920 amounted to 167,346 short tons of crude salts, containing 48,625 tons of potash. Stocks on hand at the beginning of the year amounted to 30,000 short tons of crude salts Sales during the year exceeded $7,000,000. Sixty-five plants were in operation.

During the preceding year, 1919, 77 plants reported an output of 110,243 short tons of crude salts, containing 30,845 tons of potash. In 1918, 128 plants produced 207,686 tons of crude salts containing 54,803 tons of potash.

Production in 1920 was approximately 57 percent greater than in 1919, but only 89 percent of that of 1918.

As usual, the bulk of the 1920 output came from the saline lakes of Nebraska. Production for 1920 by sources is shown in the following table:

Potash Produced in the United States in 1920

Source	Number of plants	Crude material (short tons)	Actual potash (K_2O) (short tons)	Percentage of total
Salines:				
Nebraska	11	85,245	20,934	43.0
Elsewhere	6	46,865	17,207	35.4
	17	132,110	38,141	78.4
Cement dusts	7	10,056	1,141	2.4
Blast-furnace dusts	9	1,503	152	.3
Waste from molasses distilleries	4	9,420	3,253	6.7
Waste water from sugar refineries that use the Steffens process	7	9,201	3,394	7.0
Wood ashes	16	294	200	.4
Alunite, silicate rock, kelp, and miscellaneous	5	4,762	2,344	4.8
	65	167,346	48,625	100.0

SPRY SUCCEEDS TALLMAN AS LAND OFFICE COMMISSIONER

WILLIAM SPRY, of Salt Lake City, formerly governor of Utah, was appointed commissioner of the General Land Office by President Harding on March 17 and assumed the office a few days later. He succeeds Clay Tallman, of Nevada, who held the office since June, 1913.

Governor Spry was born in Windsor, England, in 1864, and came to America when eleven years old. His first extensive business experience was in the general merchandising line in Salt Lake City from 1891 to 1893. In the latter year he took up farming and stock raising and achieved marked success, measured even by the big standards of the West. During this same period he began taking a leading part in politics. He was county collector of Tooele County, 1894-96; a city councilman of Grantsville, 1896-1903; president of the State Board of Land Commissioners, 1905:1906; president of the State Board of Land Commissioners, 1905-1906, and was appointed United States marshal for Utah in 1906, which position he resigned two years later to make the race for governor. He was installed in this office in 1909 and served two four-year terms. At the present time he is a director of the Farmers & Stockgrowers' Bank, Salt Lake City, and a controlling factor in several other financial institutions.

COMMISSIONER WILLIAM SPRY

Mr. Tallman, who was commissioner for seven years and eight months, was born in Michigan, but also became a Western man by preference. He took his B.S. degree from Michigan Agricultural College in 1895, when he was twenty-one years old, pursued post-graduate studies at the University of Colorado, and returned to Michigan and received his L.L.B. degree from the University of Michigan in 1904. But for nine years previously his home had been in Nevada. He taught school in that state from 1895 to 1902 and in 1905 began the practice of law at Rhyolite. From 1908 to 1912 he was a member of the Nevada senate. In the latter year he was the democratic candidate for Congress but was defeated by sixty-nine votes. He was appointed chief law officer of the Reclamation Service in April, 1913, and two months later was made commissioner of the General Land Office. Because of his long incumbency in that office, he is considered an authority on all subjects connected with the mineral development of the country, particularly of the West. At the last convention of the American Mining Congress, held in Denver last October, he was the principal speaker on the Mineral Leasing Law.

JUDGE FINNEY CHIEF AID TO SECRETARY FALL

JUDGE EDWARD C. FINNEY, who on March 19 became First Assistant Secretary of the Interior, is an outstanding illustration of the opportunity which lies before the average American young man to rise from the ranks to positions of the first importance. Judge Finney entered the Land Office nearly a score of years ago through competitive civil service examination, continued in its service without interruption, and now holds one of the highest offices in the United States.

Judge Finney was born in Pennsylvania and removed with his parents in 1880 to Kansas, where he worked on the farm and attended school for eleven years. He graduated from the University of Kansas in 1891, and for three years practiced law in that State. He is now a member of the bar of the state of Kansas and of the United State Supreme Court.

He took his civil service examination in 1894 and was appointed to service in the General Land Office. For several years he was an examiner of mineral claims and contests. During the Taft administration he was assistant to the Secretary of the Interior and also chief law officer of the Reclamation Service. More recently he was a member of the Board of Appeals of the Interior Department. He frequently represented the Interior Department before congressional committees and was instrumental in framing most of the legislation now on the statute books for the regulation of potash, coal, oil and phosphate leasing. He also helped frame the Federal Water Power Act, and other legislation dealing with public lands and resources.

At the last annual convention of the American Mining Congress, held in Denver, November 15-20, Judge Finney delivered an address on the process of administration of laws affecting the mining industry. His address was pronounced by all as one of the most comprehensive and illuminating statements ever made upon that subject.

CONGRESS IN EXTRAORDINARY SESSION TO REVISE TAX LAWS

By Robert G. Wilson

Chief of the Tax Division of the American Mining Congress

THE PRESENT DAY use and abuse of superlatives have robbed adjectives of much of their precision, but none can gainsay the peculiar fitness and significance of "extraordinary" as the official designation of the next session of Congress. Extraordinary and complex as were the problems of the war and immediate post-war years, the legislative responsibilities of the new Congress will be found accentuated by the very deliberation and thoroughness now possible, and now expected, at this beginning of the true readjustment period.

The most important legislation expected of the special session will be that involving the national revenue. The problem of foreign relations, important as it is, will not engage the close public attention that will be commanded by the tariff and taxation programs, with their certain and immediate effect, directly or indirectly, upon the individual pocketbook. Congress faces the difficult task of preserving the unprecedented war revenues and at the same time repealing some of the obnoxious, albeit productive, taxes initiated during the war. But it is a task that cannot be avoided, and there is promise of much interesting reading in the committee reports and the Congressional Record during the next six months.

So much has been said and written publicly anent the merits and demerits of the various proposals to be considered by Congress in the course of revenue law revision, including a series of surveys in the Mining Congress Journal, that this article is largely intended to summarize merely what appears at this writing to be the most likely attitude and procedure of Congress in dealing with the problem at large. The drafting of a schedule of action has proceeded in a most business-like way, with the co-operation and approval of the new administration. Whatever the nature and extent of the controversies, political and otherwise, that are certain to develop as specific propositions are unfolded, there is good omen in the program itself.

The determination to give tariff precedence on the House Ways and Means Committee calendar has not been without the approval of members who have considered tax revision an urgent need and who have spoken for immediate consideration. The fear has arisen that tax legislation would be pushed to too hasty a conclusion if given priority over tariff. There has also been the consideration that while the retroactive enactment of a new tariff would be impossible or impracticable, tax laws, at least income tax laws, again can be made of retroactive application, and the pressure upon Congress for immediate, if only temporary, additional tariff is not to be ignored.

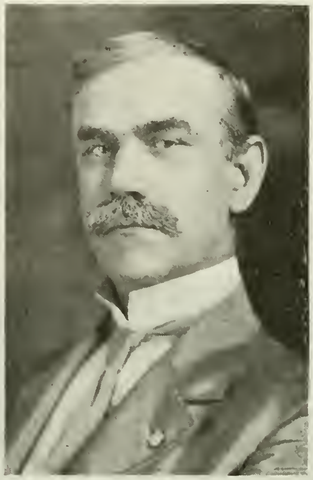
ANDREW WILLIAM MELLON

New Secretary of the Treasury, who will play an important part in the forthcoming Federal tax reform. His official prognostications of yield from sundry revenue devices will vitally influence their consideration.

The Ways and Means Committee is now engaged informally in the consideration of the tariff legislation, preparatory to the introduction of an emergency agricultural bill following the convening of the special session on April 11. There will follow in order an anti-dumping bill providing for additional duties upon foreign goods imported at prices below the value in the country of export and a bill calling for American valuation of imports, to eliminate the foreign exchange factor that at present permits low duties under the system of foreign valuations. These emergency measures out of the way, the difficult drafting of a permanent tariff bill must be cleared from the Ways and Means Committee before intensive consideration of the revenue bill can begin, meaning that at least June will arrive before taxation hearings will be held by that committee. It has been erroneously reported by the press that no public hearings on the revenue bill will be conducted as the result of press of tariff legislation. It is learned from high authority that ample opportunity will be given all interests to appear before the House Committee; in fact, the members thereof are anxious to hear the arguments to be made by the representatives of business and other organizations. It is doubtful if any member of Congress fails to realize even at this early stage the true import of the problems and responsibilities that must be shouldered in the course of placing new and amended tax devices upon the statutes. That the tariff program may not involve a total loss of time in the consideration of revenue matters the Finance Committee of the Senate, which cannot actually inaugurate tax legislation, proposes to conduct public hearings early in the new session upon the tax ques-

BOIES PENROSE

U. S. Senator from Pennsylvania, Chairman of the important Finance Committee, which will shortly begin public hearings on the proposed revision of the revenue laws. Senator since 1897.



REED SMOOT

U. S. Senator from Utah since 1903. Senator Smoot, who is a prominent member of the Finance Committee, is keenly interested in the taxation situation and advocates a modified form of sales tax.

PORTER JAMES McCUMBER

U. S. Senator from North Dakota, ranking member of the Finance Committee. Senator McCumber has served four successive terms since his election in 1899.

tions at large, the report thereon to be utilized later by the Ways and Means Committee in an effort to expedite it final conclusions.

Congress in making ready the next revenue bill will look to the treasury requirements for the next several years and not alone to immediate commitments. Here is no mean problem in itself. The whole fiscal program and future policy of the administration are involved, with necessary consideration of disposition of the floating debt and possible postponement of the setting up of sinking fund reserves against the national bonded debt. The commitments under the Transportation Act and probable enactment of a soldiers bonus bill with its further obligations are other questions that serve to complicate. However, the action of the last Congress in disposing of most of the standard appropriation bills gives some index of the demands to be made by the treasury up to June 30, 1922. Exclusive of provision for the railroads and for the navy, the appropriations for the fiscal period ending in 1922 aggregated about $3,400,000,000, but the remaining commitments will bring the total to somewhere between $4,500,000,000 and $5,000,000,000, or approximately the same stupendous expenditure as that made for the fiscal year ending June 30, 1921. This authorized outgo for the next year is in face of the fact that the bulk of the national revenue during the last several years has been provided by direct levy upon incomes and profits that were stimulated to unprecedented levels as the result of a high prosperity that no longer exists. By the time Congress is ready to act definitely upon the revenue bill the yield from the 1920 tax returns will have been fairly determined, and the expectation is that it will show a serious decline.

By no means a small part of the procedure should be the determination of the practicability of changes in the general fiscal program that would result in a marked reduction of gross requirements for the next several years. Persistence in the effort to set up sinking funds against the maturity of the national funded debt, and gradual elimination of the huge floating indebtedness, must demand a large slice of all revenue receipts. There is, however, a growing manifestation of belief that the present generation is shouldering more than its proper and economically wise share of the cost of the war. It is quite evident that a funding of the floating debt and a postponement for five or ten years of sinking fund requirements of the bonded national debt, with the prospective refunding of the Victory notes and War Saving securities maturing in 1923, would remove or postpone a material portion of the existing burden and take from industry and business some of the repressive influences of excessive taxation. That would inevitably assist in a rejuvenation of business that would make still relatively heavy taxation more economically bearable. Such a program, even if only partially adopted, would, together with some certain receipts from remaining salvage of war materials, accelerated return from war taxes still outstanding, and other miscellaneous income, take from the present situation much of its sting and bring a welcome lessening of the tremendous responsibility that now rests upon Congress.

The simplest and most conservative programs for revision largely revolve around the proposals of Representatives Longworth of Ohio and McLeod of Michigan, each of whom in the last session introduced a bill solely for the purpose of laying a plan before Congress for repeal of some of the war taxes and simplification of the general system, for consideration prior to the convening of the special session. It is understood that these bills will be re-introduced.

Representative Longworth proposes the repeal of the war and excess profits taxes, reduction of the surtaxes on higher incomes to a maximum of 40 per cent, repeal of all transportation taxes, and elimination of the more or less

NICHOLAS LONGWORTH

Congressman from Ohio and well-known member of the Ways and Means Committee. Representative Longworth, who will introduce a bill to repeal the excess profits tax and reduce surtaxes, is one of the most active and conservative students of taxation.

JOSEPH WARREN FORDNEY

Chairman of the Committee on Ways and Means of the House of Representatives and a prominent member of Congress from Michigan since 1899. Author of the emergency tariff bill and advocate of less burdensome taxation.

WILLIAM RAYMOND GREEN

Congressman from Ohio and member of the Ways and Means Committee. Author of the Green bill to Amend the Revenue Act of 1918, which passed the House unanimously in May, 1920, and many features of which will probably be incorporated in the new revenue law.

irritable and relatively petty existing taxes on soda-water, ice-cream, and other so-called "fountain products." The congressman from Ohio estimates that the elimination of these devices would involve a loss of about $890,000,000, itemized as follows: Repeal of excess profits tax, $450,000,000; reduction of surtaxes, $124,000,000; repeal of all transportation taxes, $282,000,000; repeal of tax on fountain drinks, etc., $40,000,000.

In this proposal for reductions and eliminations, it is assumed that the loss involved will be compensated to the extent of about 40 per cent., or $360,000,000, as a result of the prospective increase in tariff receipts. To replace the remaining loss of more than a half billion dollars, Congressman Longworth has incorporated the suggestion made by the National Industrial Conference Board Allied Tax Committee that the present exemption of $2,000 to corporations be eliminated and that the existing corporate income tax be increased from 10 to 15 per cent. Providing that the income to be derived from the measures allowed to remain on the statutes under such a plan will not during the next year or two be so diminished, as the result of any extended continuance of the present business depression, as to fail of yield necessary to meet the Treasury requirements, perhaps no more simple or generally more satisfactory answer can be found, even though failing as it does, to meet the demands of the propagandists who are calling for an almost complete revolution of existing revenue-producing methods.

According to the current press, agitation is developing for a concession to the "little man," in view of the proposed reduction of the higher surtaxes, which were designed to fall upon the wealthy, but which have failed of expected yield to a remarkable extent as a result of the sanctuary found in tax-exempt securities. However, such a proposal, even with its undeniable political aspects, permits little serious consideration in view of the fact that one of the chief difficulties of Congress will be that of maintaining the volume of present revenue without actually increasing normal income taxes. As a matter of fact, there are many at the Capitol who will most reluctantly assent to the reduction of high surtaxes, and who will yield to downward revision only because the higher rate taxes are rapidly repealing themselves as the average personal income diminishes under current deflation, and the privilege of resorting to tax-exempt investment continues.

The question of a sales tax is as yet by no means definitely settled, although it is known that a number of Congressmen originally inclined to favor it have changed their minds. Whatever the ultimate outcome, it is virtually certain that a general sales or turnover tax of one or two per cent. will fail. It also seems to be the sentiment at the Capitol that a general sales tax of any nature will not appear in the revenue bill as finally drafted in the House. It is possible that when the bill reaches the Senate some form of modified sales tax may be introduced as an amendment. It is known that Senator Smoot, of Utah, is at present engaged in drafting a bill which proposes a small tax on sales of commodities, understood to apply in such manner as to avoid the pyramidal effect of a levy upon each turnover. There are many in both branches of Congress, however, who believe that if the sales tax has any chance in any form, it will only be as an adjunct to a soldiers bonus bill or as a provision to finance some other specific project. There are also many who predict that the House will never consent to the imposition of any tax upon necessities of life generally, except as a last resort to yield revenue that cannot be raised otherwise. While a soldiers bonus bill seems likely of passage, it has not yet been determined whether it will carry a provision for its cost or be enacted without reference to source of revenue. In any event, it may be safely predicted that the extreme proposals for a sales tax to supplant income taxes will receive no serious consideration.

Mr. Longworth is to be congratulated upon including in his bill an administrative provision permitting the Commissioner of Internal Revenue and the taxpayer to "get together." If an agreement in writing is reached any determination, assessment, or payment of tax shall be final and conclusive; the case may not be reopened by any officer, employee or agent of the United States; and no suit to set aside such determination or assessment may be entertained by any court of the United States. This is beyond doubt a most advantageous and much-needed provision, and will be generally welcome if enacted, so far as it goes. However, this proposal assumes that the Revenue Bureau and the taxpayer can get together despite the complexities of the war revenue laws. The writer is well aware of the fact that in many instances the exact application of the existing laws to individual cases is an almost, if not altogether, impossible accomplishment. Despite the progress that has been made in the Revenue Bureau in dealing with accumulated tax cases, thousands of 1917 cases are still in dispute, to say nothing of 1918 and subsequent years.

It is altogether likely that early in the new session a bill will be introduced in the House embracing the recommendation of the American Mining Congress for the creation of a Federal War Tax Settlement Board, giving power to the proposed nine members thereof to determine assessments and to compromise in simple equity where no other solution appears. It is certain that something must be done to clear up the accumulations, not only in the interest of the taxpayers but in the interest of the government as well. It is estimated that something between a half billion and one billion dollars remains uncollected for the years 1917, 1918 and 1919. Determination and payment of this huge sum within the next year or eighteen months would be a material factor in computing revenues necessary to be derived from the tax laws of 1921 and the following two or three years.

Unwelcome to taxpayers as are the decisions just handed down by the Supreme Court in the Brewster, Eldorado and Goodrich cases, the lawmakers are feeling considerably relieved. Had the decisions of the court been otherwise than favorable to the government's contentions, not only would the now d minishing yield of income taxes have been considerably further reduced, but the Treasury would have been forced to refund hundreds of mi lions of dollars collected in prior years.

It is almost certain that the popular demand for repeal of the excess profits tax will be gratified. It is highly probable that the personal income surtaxes will be materially reduced, so far as the higher brackets are concerned. Certain betterments in the administrative provisions of the existing law may be predicted with confidence. But here prediction stops. The problems involved in the replacement of revenue losses resulting from elimination and reduc ion of certain taxes are so huge and complex, and the proposals made by business organizations are so divergent, that one's finger may be placed upon little that is specific. However, it will not be surprising if Congress adheres fairly closely to the recommendations made by the Allied Tax Committee of the National Industrial Conference Board, American Petroleum Institute and American Mining Congress in its voluminous report—not necessarily because of the size and stability of the industries and interests represented in the work, but rather because of the conservative, able and unselfish tone of what has become recognized as one of the most valuable commentaries on the subject extant.

To set aside some of the stories now being circulated by certain interests to the effect that the Allied Tax Committee report was withdrawn, there is here given a resolution recently adopted by that committee:

"Resolved: That after full consideration and discussion of the opinions expressed by delegates and guests at the Third National Industrial Tax Conference the Enlarged Tax Committee still feels that its report of December, 1920 reflects as nearly as can be the prevailing opinion of the Committee in respect to needed reforms in the Federal Tax situation, and the character of such reforms, and therefore considers its report of December, 1920, as its Final Report and will so advise all co-operating associations."

ZINC PRODUCTION, 1917–1920

ZINC PRODUCTION in the United States last year was 463,808 short tons, or approximately 2,000 tons less than the year before. The total value of output was $78,599,000, or approximately $8,000,000, more than that of 1919.

Statistics of output for the last four years have been announced by the Geological Survey as follows:

Zinc Produced in the United States, 1917-1920, in Short Tons

	1917	1918	1919	1920
Arkansas	25,660	26,753	31,437	31,481
Illinois	172,489	141,844	*a*118,340	*a*108,851
Kansas	76,048	29,149	43,942	41,044
Oklahoma	204,394	139,066	121,988	110,931
Pennsylvania	86,995	77,342	67,521	74,234
Other States	78,778	64,857	55,459	45,641
Electrolytic	25,209	38,916	27,056	51,626
Total primary	669,573	517,927	465,743	463,808

*a*Exclusive of electrolytic zinc made in Illinois.

Production by Ore Sources

	1917	1918	1919	1920
From foreign ore:				
Australia	26,140	1,780	630	2,235
Canada	6,787	8,700	4,007	1,583
Chile	......	886	751	536
Italy	2,951	113	....	....
Mexico	40,360	14,043	8,083	8,978
Spain	8,738	......	....	....
Total foreign	84,976	25,522	13,471	13,332
From domestic ore	584,597	492,405	452,272	450,476
Total primary	669,573	517,927	465,743	463,808
Redistilled secondary	16,835	9,918	19,748	21,371
Total	686,408	527,845	485,491	485,179

Grade of Output

	1917	1918	1919	1920
Grade A	97,707	129,344	45,377	80,713
Grade B	69,189	68,987	39,173	33,893
Grade C	148,749	98,584	140,917	59,811
Grade D	370,763	230,930	260,024	310,762
Total	686,408	527,845	485,491	485,179

Value of Output

	1917	1918	1919	1920
Average selling price per pound:				
Grade A	14.0 cents	11.1 cents	8.3 cents	8.4 cents
Grade B	12.7 cents	10.7 cents	7.7 cents	8.3 cents
Grade C	9.4 cents	8.0 cents	7.2 cents	8.2 cents
Grade D	9.0 cents	7.9 cents	7.1 cents	8.0 cents
All grades	10.2 cents	9.1 cents	7.3 cents	8.1 cents
Total value of output	$140,027,000	$96,068,000	$70,882,000	$78,599,000

THREE REASONS WHY THE TWENTY-FOURTH MINING CONGRESS CONVENTION AND NATIONAL EXPOSITION OF MINES WILL BE SUCCESSFUL

Moffett, Chicago

FRANCIS S. PEABODY

Moffett, Chicago

JAMES H. CHANNON

Moffett, Chicago

H. H. MERRICK

Mr. Peabody, who is chairman of the Board of the Peabody Coal Company, is Chairman of the Illinois Committee on Arrangements for the Convention and Exposition. Mr. Merrick, president of the Great Lakes Trust Company, is the committee treasurer. Mr. Channon, president of the James James H. Channon Manufacturing Company, is Chairman of the Exposition.

NATIONAL INTEREST SHOWN IN NEXT MINING CONGRESS CONVENTION

ALTHOUGH SIX MONTHS AWAY, the twenty-fourth annual convention of the American Mining Congress, which will be accompanied by a National Exposition of Mines and Mining, is already attracting national attention. Convention headquarters in the Congress Hotel, Chicago, daily receives many letters from local, state and national leaders and officials evidencing a belief that the American Mining Congress is rendering a real service to the nation as well as to the industry through its plan to visualize the mining industry in its entirety through an exposition devoted exclusively to the concrete problems involved in metal, coal, and oil production. Assistant Secretary John T. Burns, now touring the western states in behalf of the exposition, has been accorded enthusiastic receptions en route.

The State of Minnesota has already secured exposition space, in which it will make the first comprehensive national showing of the commercial uses of its millions of tons of peat as fuel in various forms and in many by-products in which it is said to rival coal. Under direction of State Mining Inspector Wildes, in co-operation with the School of Mines, the mining and commercial uses of the state's vast peat deposits are being made possible. The great iron deposits will also receive attention in the display. Governor J. O. A. Preus will head the Minnesota delegation to the convention.

Governor Hart of Washington will head the delegation from his state. Frank M. Smith, manager of the Bunker Hill & Sullivan interests, and Sidney Norman, publisher of *Northwest Mining Truth*, are chairman and vice-chairman, respectively, of the Eastern Washington Committee which is organizing an exhibit from that section. Falcon Joslin is chairman of the committee appointed by the Seattle Chamber of Commerce for the western section of Washington and also for Alaska.

In addition to established production, the new copper deposits and the undeveloped iron, magnesite and other resources of Washington will be given liberal attention, and a group of coal operators is being organized to prove to the country that Washington as a state may be independent of the so-called "coal belt" for its heat and power. Water power from mountain streams will also have attention.

Alaska will take advantage of the American Mining Congress exposition to show her right to a place on the flag. The Alaskan Bureau of the Seattle Chamber of Commerce, under its manager, J. L. McPherson, is actively backing the project.

In Seattle Mr. Burns recently addressed two meetings called for the purpose of putting the Alaskan exhibit before both mining people and the Alaskan legislature, and a jointly signed cablegram from the Seattle chamber, Mr. Joslin's committee and the American Mining Congress was read to the legislature by Governor Riggs the day following the Seattle conference.

Governor Thomas L. Dixon, Senator Muffly, president of the Montana Mining Association, Dr. C. H. Clapp, president of the Montana Schools of Mines, and Paul Gow, president of the Butte Chamber of Commerce, are leading in the committee work in behalf of Montana, and there is little question about this state being represented in Chicago by one of the best exhibits ever made by a western commonwealth. Montana, which is just entering the public eye as an oil producer, will show the possibilities of this new resource. President Kahl of the Oil Producers Association is co-operating with the mining committee.

Assistant Secretary Burns on March 18, accompanied by A. G. Mackenzie, secretary of the Utah Chapter, called upon Governor Mabey of Utah relative to having a Utah exhibit at the convention. Governor Mabey was impressed with the advantages which would accrue to Utah and told Mr. Burns and Mr. Mackenzie he would do everything in his power to send a Utah exhibit to the convention. The governor also said that it was his desire to head a large Utah delegation to Chicago and that he would certainly do so unless the press of executive matters made his absence from the state impossible.

Conferences between Assistant Secretary Burns and groups of operators with state officials were scheduled to be held during the latter part of March and early April in Wyoming, Colorado, New Mexico, Arizona, California, Nevada, Oregon, Idaho and Utah in the order named and there seem to be assurances of a general response to the invitation for all the West to meet in Chicago and renew the effort to re-establish public confidence in mining and acquaint the nation with the vast undeveloped possibilities still awaiting the co-operation of American capital.

NORTHWEST SUPPORTS ACTIVITIES OF MINING CONGRESS

ENDORSEMENT of plans of the American Mining Congress for a national exposition of mines and mining equipment, to be held in Chicago next October during the twenty-fourth annual convention, was voted by the Northwest Mining Convention, at Spokane, Washington, on March 5. The convention, which began on February 28 and continued a week, was largely attended and was generally pronounced the best Northwest Mining Convention held in twenty-six years.

Action of the American Mining Congress in connection with the investigation now being made by the Federal Trade Commission into Minerals Separation, North American Corporation, was also approved, and endorsement was likewise given to the McFadden Bill. The support of the mining men of the Northwest was formally pledged to the American Mining Congress in connection both with the coming Chicago exposition and the Minerals Separation probe. The Kenyon Bill and restrictive blue-sky laws of the various states were emphatically condemned.

On the last day of the gathering, telegrams from the convention were received in Washington by President Harding, Secretary of the Interior Fall and Secretary of Commerce Hoover. The mining men of the Northwest were the first in the country who, in convention assembled and by formal action, pledged their co-operation to the new administration.

The telegram received by President Harding contained this sentence: "While the mining industry has suffered with all others in the present period of sharp readjustment, we look forward with optimism to a speedy improvement under your guidance." Mr. Hoover was assured that the mining men of the Northwest would "always remember with pride and gratitude the patriotic part played by you in world events for the last few years and the great honor thus brought upon your country, yourself and the mining engineering profession."

Following is the message received by Secretary Fall:

"We, mining men of the northwest in annual convention assembled at Spokane, tender sincere wishes for successful administration of the great office you have assumed. Conduct of its affairs vitally affects the industry in which we are engaged and we respectfully ask such liberal interpretation of rules and regulations as will preserve the rights of the nation but at the same time open to most intensive development the public lands of the west."

The resolutions adopted in reference to the Chicago exposition, "Blue-sky" legislation, Minerals Separation and the McFadden Bill, follow:

American Mining Congress

WHEREAS, it is important to the mining industry to re-establish public confidence in mining through organized educational propaganda; and

WHEREAS, a widespread and exact understanding of the importance, hazards and methods of mining should act as a deterrent upon restrictive or destructive legislation as affecting mining; therefore, be it

Resolved, that the plans of the American Mining Congress for a national exposition of mines and mining equipment, to be held in Chicago, Illinois, October 17th to 22nd, 1921, are hereby endorsed and the northwestern states are urged to participate in said exposition and to contribute to its success.

Blue Sky Legislation

WHEREAS, the prosperity of the mining industry is dependent upon the provision of capital for development; and

WHEREAS, raising of capital becomes increasingly difficult as states of the Union are subjected to the restrictions of variegated blue-sky laws, compliance with which is impossible except at great unnecessary expense; and

WHEREAS, men engaged in legitimate constructive effort of benefit to the mining industry are, by so-called "blue-sky" laws of over thirty states, placed at serious disadvantage, to the detriment of the entire west; and

WHEREAS, we are strongly in favor of the fullest protection of the investing public in any manner that will at the same time protect the honest promoter who has been of such great value to development of the resources of the West; therefore, be it

Resolved, by delegates to Northwest Mining Convention, assembled at Spokane, Washington, February 28—March 5, 1921, that in their opinion state "blue-sky" laws should be standardized or some other means be devised to remove all restrictions to the raising of capital and permit men engaged in legitimate constructive effort to seek capital in any state of the union untrammeled by destructive and repressive laws retarding development of the mineral resources of the west; and be it further

Resolved that "blue-sky" measures now before Congress, including specifically the Kenyon Bill, be, and hereby are, emphatically condemned as calculated to destroy development of mineral resources and therefore antagonistic to the general prosperity of the West.

Approving Mining Congress Stand on Minerals Separation

WHEREAS, the Federal Trade Commission is maintaining proceedings against the Minerals Separation North American Corporation; and

WHEREAS, The American Mining Congress has lent its assistance in developing and presenting evidence in connection with this proceeding; now, therefore, be it

Resolved, By Northwest Mining Convention, assembled at Spokane, Washington, February 28-March 5, 1921, with delegates present from all northwestern states;

That this convention hereby indorses and commends the proceedings of the Federal Trade Commission against the Minerals Separation, North American Corporation, and indorses and approves the action of the American Mining Congress in supporting the Commission's proceeding; and be it further

Resolved, That mining men of the northwest pledge assistance to the officers of the American Mining Congress in their efforts to remove what constitutes a serious menace to the mining industry.

The McFadden Bill

WHEREAS, the government of the United States is committed to the gold standard, and whereas under such standard the maintenance of the gold mining industry is essential, and whereas, the gold mining industry of the United States is now in deplorable straits and it has become necessary to apply some measures for immediate relief, and whereas the McFadden Bill, H. R. 13201, appears to offer the best available solution of the problem. Now, therefore, be it

Resolved by mining men of the Northwest, assembled in annual convention at the northwest Mining Convention, Spokane, Washington, February 28th-March 5th, that the McFadden Bill is hereby endorsed and the support of the delegates pledged to the measure in the belief that the maintenance of the gold standard is essential to the common welfare of the country.

Resolutions were adopted favoring an adequate protective tariff on lead, zinc, magnesite and mercury; joint action by carriers and shippers for immediate reduction of ore freight rates; amendment of the Assessment Act to provide that annual work on mining claims be performed by September 1 instead of December 31; immediate repeal of the Grazing Act which provides for homestead entries to the extent of 640 acres; enactment of a law making mutilation or melting of coinage a criminal offense.

Co-operating in making the convention both successful and enjoyable were the Associated Engineers, the Northwest Mining Association, the Mining Committee of the Spokane Chamber of Commerce, the Washington State Metal Mining Association, the Columbia Section of the A. I. M. E. and the Spokane Stock Exchange. Social and business plans were carried out by a Committee of Control from these organizations, of which L. K. Armstrong, president of the Washington State Metal Mining Association, was chairman; Sidney Norman, editor of the *Northwest Mining Truth*, vice chairman; M. E. Poole, secretary; and F. C. Bailey, treasurer..

WELFARE WORK COMMITTEE BEING ORGANIZED

IN THE further development of the Standardization Division of the American Mining Congress, the chairmen of the coal and metals branches each have decided to organize sub-committees on welfare work. These committees will include in their personnel not only the welfare activities of the operating mining companies, but welfare plans worked out by the large industrial concerns who cater largely to the mining industry through their manufacture of equipment and supplies. The degree of enthusiasm with which committee appointments are being accepted indicates a general recognition of the value and timeliness of the work contemplated.

The object of these sub-committees is not with a special view to standardizing welfare systems, but to make available to the fullest extent complete information as to the systems already in existence which are satisfactorily solving what is perhaps the greatest problem facing all industry—the contentment and efficiency of the workers.

Such representative companies as the Colorado Fuel and Iron Company, the Phelps Dodge Corporation, the Stag Canyon Fuel Company, the Consolidation Coal Company, the Jeffrey Manufacturing Company, and many others of equal importance have signified their willingness to assist in this educational branch of the Standardization Division.

Reports as to the development of this work will be printed in the MINING CONGRESS JOURNAL and the official report will be printed in pamphlet form and widely distributed.

ARIZONA CHAPTER MAKES SUGGESTION FOR SAVING COPPER SITUATION

STIMULATION of the copper market by means of an educational exhibit at the next American Mining Congress convention was urged by the Arizona Chapter at a meeting held March 14. Since the Exposition of Mines and Mining to be held during the convention will be attended by thousands of people from the United States and other countries, the Arizona Chapter considers it an unexcelled opportunity for placing before the public the value of copper and alloys of the metal in its many uses.

The Chapter adopted resolutions requesting the Mining Congress to feature exhibits "which will have as their object the dissemination of knowledge of the present and possible commercial uses of copper and its alloys and the advantages of these over substitutes now being used."

Convention headquarters in Chicago reports growing national interest in the Exposition of Mines and Mining, and it is considered certain that copper will be represented by numerous exhibits of great educational value.

OIL SHALE DIVISION BEING REORGANIZED

THE American Mining Congress has devoted a certain portion of its time for the past year in the development of an Oil Shale Division, and complete reorganization of this division is now being effected. It is anticipated that it will be one of the most important features in the work of this organization because of the realization that oil shale is one of our coming industries.

It has been said authoritatively that the rapid depletion of our oil wells and the increasing difficulty in finding new structures to meet the growing demand for oil will within a few years find the United States unable to meet the oil needs of industry unless our shale resources are made available.

The Oil Shale Section will divide itself into a number of sub-committees, each giving particular study to various phases of the industry, one of which will be a compilation of the resources and the various types of equipment which have been proposed for the satisfactory distillation of oil from shale. Legislation which is paramount to the industry's development will also receive consideration, and facts presented to Congress which will enable it to legislate intelligently for the industry. When the personnel of the division is completed, and their recommendations are available for publication, announcement will be made through the columns of the MINING CONGRESS JOURNAL

UTAH CHAPTER ELECTS

MEMBERS OF THE UTAH CHAPTER, American Mining Congress, at the annual meeting March 14, re-elected officers as follows: George W. Lambourne, president Judge Mining & Smelting Co., governor; Walter Fitch, president Chief Consolidated Mining Co., first vice-governor; C. E. Allen, general manager United States Smelting, Refining & Mining Co., second vice-governor; J. William Knight, vice-president Knight Investment Co., third vice-governor; A. G. Mackenzie, secretary and treasurer.

Louis S. Cates, general manager of the Utah Copper Co., and M. R. Evans, president of the Columbus-Rexall Mining Co., were added to the board of directors of the chapter.

UTAH OPERATORS FORCED TO MAKE WAGE CUT

HIGH FREIGHT RATES are held mainly responsible for a cut of 25 cents per shift in the wage scales of all underground metal mines in Utah. The operators have posted notices that the cut will go into effect April 1.

The mine operators point out that they are confronted with a choice between keeping a partial force employed at reduced wages or suspending operations entirely. They assert it is no longer possible to produce metals at a profit and, unless the situation improves materially in the near future, they expect to shut down their properties entirely.

In announcing the cut the operators, through A. G. Mackenzie, secretary of the Utah Chapter of the American Mining Congress, as spokesman, gave out the following statement:

"The mine operators greatly regret the necessity of reducing wages again, but the step is absolutely unavoidable. The action has been decided upon only after the most careful consideration and with a realization that costs must be reduced if operations are to be continued.

"The operators believe it best to make a frank statement of the existing situation for the information of all interested and have authorized me to make the facts public.

"Copper production ceased to be profitable in this state months ago, and recently the lead price dropped far below the cost of production. Even our richest silver-lead mines are now unable to operate profitably, as their losses on lead offset the profits on silver.

"The impending wage reduction will not enable the mines to operate at a profit. It should be viewed only as a step forced upon them by the existing circumstances. Unless other items of cost come down, or the markets improve speedily, the operators will soon have to choose between further wage reductions and complete suspension of operations.

"High cost of mine supplies, such as powder, caps, fuse, steel, etc., the recent enormous increases in power rates, and, more than anything else, the high freight rates which hit the industry at every angle, are chiefly responsible for the present crisis. The mine operators have made every effort to obtain reductions in these items, but they are still so inconsistent with the metal market situation that wage reductions are absolutely forced.

"Many of the mines have already suspended ore shipments and the others are getting things in readiness to shut down in the near future unless a radical improvement takes place."

MINING EXPERIENCE OF NEW SENATORS FROM WESTERN STATES

SAMUEL M. SHORTRIDGE, new Senator from California, is the son of a clergyman and was born in Iowa, but his family went west when he was a youngster. The year 1873, when he was only eleven years old, found him working in the mines at Nevada City.

Samuel D. Nicholson, new Senator from Colorado, is a big mine operator, including both gold and silver mines.

Tasker L. Oddie, who comes to the Senate from Nevada, was born in Brooklyn, and went to Nevada in 1898 to look after railroad, mining and banking properties of the Stokes interests. He soon cut loose from the Stokes interests and began working his claims with his own hands. Finally he became a partner of Jim Butler in the discovery and development of the great Tonopah mines. For five years he managed these properties. Later, he became interested at Goldfield.

Senator John W. Harreld, of Oklahoma, has made considerable money in oil.

PRESIDENT HARDING MAY VISIT ALASKA

A STRONG DESIRE to visit Alaska was expressed by President Harding a fortnight ago. He signified his intention of making the trip during the forthcoming summer. Secretary of the Interior Fall will probably accompany him and the two will make a first-hand investigation of the country's mineral resources.

JESSE KNIGHT PASSES AWAY

ONE OF THE OUTSTANDING MINING FIGURES for a generation past was lost to the West when Jesse Knight died at his home in Provo, Utah, March 14, of paralysis. Mr. Knight had suffered two strokes since the first of the year. After the second one took place in February, he recognized that his death was liable to occur at any time and surrendered his position as head of the so-called "Knight companies," embracing more than sixty corporations engaged in metal and coal mining, banking, ranching, manufacturing, railroading and irrigation.

"Uncle Jesse," as he was generally known, was born in Illinois, Sept. 6, 1845. His father died two years later and the widow and her children came to Utah overland in 1850 as members of the Mormon church. Jesse Knight had little opportunity to obtain a school education, as his early life was one of most exacting toil. As a very young man, he engaged in freighting to the mines of Montana, participated in the Black Hawk Indian war and became a cattle buyer. He was one of the first to engage in mining in the Tintic district of Utah, where he developed many successful properties.

The wealth that came to him as a result of his wide operations was unquestionably always subordinate to his desire to develop the region in which he lived. He touched almost every western activity at one time or another and could always be relied upon to put his brains and his resources behind any meritorious development proposition.

JESSE KNIGHT

Mr. Knight never held public office, although he had always been a stanch adherent of the Democratic party. That party nominated him for governor of Utah in 1908, against his expressed wish. Mr. Knight promptly and definitely declined the nomination and announced that if elected he would not qualify, so that the state committee was under the necessity of choosing another candidate. A son, J. William Knight, is at present a member of the Utah State senate and a vice-governor of the Utah Chapter, American Mining Congress, of which "Uncle Jesse" was a life member. Other children are Oscar Raymond Knight, Mrs. Amanda Allen, Mrs. Jennie Mangum and Mrs. Iona Jordan, all of Provo. The widow also survives.

WESTERN DRIVE FOR McFADDEN BILL LED BY PRESIDENT LORING

BUSINESS MEN concerned in the country's financial stability are rallying to the support of the McFadden Bill as a result of a Western campaign which has been opened by President W. J. Loring, of the American Mining Congress. Headquarters have been opened in San Francisco, from which Mr. Loring and Fletcher Hamilton of California, his chief associate, are conducting an active drive.

Messrs. Loring and Hamilton are visiting various cities in the West. Numerous meetings have been held, and the ranks of those who realize that the McFadden Bill should be passed at once are being augmented and the forces of its supporters co-ordinated.

The fact that the McFadden Bill is the proper remedy for the existing unsatisfactory condition of the industry and the consequent importance of immediately enacting it into law, were explained by Mr. Loring in the following statement:

"The executive committee was appointed recently in San Francisco in behalf of the passage of the McFadden bill. This committee, which is composed of leading San Francisco business men, is hard at work, having gone at the task of educating the public as to the necessity and merits of the bill. They are sincere in their conviction that they are working for a good cause and that they are going to succeed.

"The McFadden bill, like many other measures, was unfinished at the end of the late session in Washington. It will be necessary to reintroduce this bill, but no time will be consumed or no difficulty experienced in bringing the bill forward. The proponents of this measure are of firm conviction that the gold producers and the gold reserve of our nation will be largely supported as the result of the campaign that has been waged for the last year of two in Washington for the purpose of educating the people up to the necessity of obtaining relief for the gold producers, such as that provided by the McFadden bill.

"The American Mining Congress is firmly behind the McFadden bill, and until some other measure that is considered to offer better relief is proposed the McFadden bill will be the measure for which this body will fight. With the passage of this measure, or some other measure giving like relief, there will be brought into reserve millions of tons of ore in the United States that is already developed and which is too low grade to pay to mill under present conditions. This enormous reserve will be a national loss unless something is done for the purpose of giving relief such as is proposed by the McFadden bill."

Mr. Loring in his statement reviewed the history of some of the largest individual mines which have been compelled to shut down, and showed where many of them, if encouraged by the passage of the McFadden Bill to resume operations, would yield a considerable production.

ABLE FINANCIAL EDITOR LENDS HIS SUPPORT TO McFADDEN BILL

IN ITS ISSUE of March 12, *Financial Age*, New York carried an editorial under the title, "To Conserve Gold Production," which is considered as an unusually lucid exposition of the McFadden Bill and the many factors entering into the complex situation which demand its enactment into law. It is herewith reproduced in full:

"It is gratifying to note that the Sub-Committee of the Ways and Means Committee of the House has reported favorably on the McFadden Bill. This measure, introduced by Representative Louis T. McFadden, Chairman of the Banking and Currency Committee of the House, was designed primarily to prevent a further decline in the gold output of the United States. Incidentally the bill suggests methods to prevent the loss of developed ore of the yellow metal resources, due to caving in of the workings when closed down, rotting of timbers and flooding. These evils are all preventable, and rightly should be regulated by such legislation as proposed.

"Startling figures as to the decline in the gold production of the country are given in advocacy of the final passage of the McFadden measure by Congress. From an output of $101,000,000 in 1915, the amount had dropped to $49,500,000 in 1920. The extent of the widespread shutting down of the mines is indicated by these figures. Loss due to the purely physical causes designated in the bill, also played a part.

"Owing to the fact that the price of gold is fixed by the Government in this country, the production of gold has been rendered unprofitable in the face of rising costs in other lines. Consumers of gold such as jewelers and others, are practically subsidized, it is stated, by having the metal sold to them at prices extant in the pre-war period. It is to remedy this condition, Mr. McFadden has said, that provisions have been introduced in his measure. Without in any way interfering with the monetary unit, these clauses correct the cost and price equation between the industrial consumer of gold and the producer of new metal. Such a stabilizer would be of a final benefit to all concerned.

"In the report of the Director of the Mint it was stated that in 1919 gold to the value of $75,500,000 was used in the manufacture of jewelry, and for other industrial purposes. This was $15,000,000 in excess of the production for that year.

"This country's gold resources, which are annually becoming more restricted, and which the McFadden bill aims to conserve, as far as possible, are low grade ores chiefly, which require operations on a large scale, and development at great cost. What is regarded as a fatal policy is that of mines still operating restricting production to their best ores, or "gutting the mine" as it is technically called. It is explained that this usage is fatal, because not only is the permanent loss of developed ore reserves involved, there being no replacement of these, but it necessitates the non-operation of plants that cost heavily, and their "scrapping," with no prospect of their being rebuilt under existing conditions.

"Gold mining no longer attracts capital in this country, since the former fruitful fields have been almost exhausted, with prospecting almost abandoned. It is said that there is small chance now for the discovery of gold mines. It is interesting to note, in this connection, that the gold fields were but little worked even at the time of the Civil War. This was the case notwithstanding there was a rush to California after the "strike" there in 1849. Gold mining on a large scale had not been widely extended during the 12-year interval before the war between the states. Since then, fields have yielded upwards of $3,000,000,000, and the best deposits have been depleted.

"In view of these facts, indicating the rapidly-diminishing supply of gold from the mines of the country, the McFadden bill, whose object is conservation, deserves the highest consideration."

LORING SEES BIGGER FUTURE FOR CALIFORNIA MINING

IMPORTANCE OF MINING in the upbuilding of California was pointed out in an article in *San Francisco Business* by W. J. Loring, president of the American Mining Congress. Mr. Loring showed not only the progress made by the state in the past on account of mining, but the opportunities still remaining to be developed. He likewise pointed out that the state could advance in other directions if similar effort was put forth.

"The new generation of Californians perhaps little realizes the important part mining for gold played in laying the foundation for what the state has grown to be," Mr. Loring said. "Not alone did the discovery of gold lay a foundation for the development of gold mining, but the base metal and mineral resources came in for their share of attention until California has become an outstanding factor in metal and mineral production of the United States.

"No doubt had gold not been discovered, California would have been developed because of its natural resources, but the development would have been slower without that historic discovery.

"In the year 1848, \$245,301 was put out in gold value in California. The following year, 1849, \$10,151,360 was produced. In 1850 the production was \$41,273,106; in 1851, \$75,938,232. In 1852 it was \$81,274,700, and from 1852 to 1920 production gradually fell off until it got down to \$13,950,900 in the latter year, the total yield of gold to 1920 being \$1,720,496,203.

"Taken in years between 1883 and 1894 the yield ranged between \$13,600,000 and \$15,334,317. Then it gradually increased to \$22,442,296 in 1915, since which time the yield has grown less until it reached the low period around the eighteen nineties.

"The difficulty at present is that there are no new fields or new improvements to be made that will likely increase the annual yield as was the case around 1906, when the state's dredging enterprises began to be a factor.

"Of the mineral production for 1920, which totals \$242,142,000, gold is only \$13,950,000, while the state's output should be around \$20,000,000."

Approximately 18,000 men are employed in the mines and by mineral producers of California. Mr. Loring used this figure as a basis for an estimated statement that 104,000 citizens of the state are supported by the mines, to which number must be added those who receive mine dividends.

Continuing, Mr. Loring said: "Little is known by some of our eastern friends, except superficially, of the great wealth of the Golden State. It would appear to me that an industry that produces the enormous sum of \$242,000,000 is worth fostering and is worth the time of those who are acquainted with the state's great natural wealth to talk, write, and do everything possible not only to stimulate California's resources, but to attract investors from other fields. We should not be selfish and try to keep all for ourselves. We should endeavor to bring capital and new ideas to bear upon the development of California's resources.

"Our resources should not be pushing us for development; we should be forcing development with all the energy within our power.

"We should push our natural resources by all possible means, and push just as hard during good times as we do during poor times.

"My opinion is that no time should be lost in getting into the boat called 'California' and pulling for the shore with one mighty purpose—to stand together for the development, protection, and welfare of our state and its people. While we are building this durable monument we should ever keep in mind the initiative of the stalwart Argonauts who laid the foundation for California's prosperity through the discovery and development of gold.

"Why cannot we develop our other natural resources with the same vigor and splendid enthusiasm? It can be done, and we should get busy and do it."

Mr. Loring also pointed out California's possibilities in the further development of petroleum, quicksilver, and water-power.

BAIN TO BE NAMED AS BUREAU OF MINES DIRECTOR

APPOINTMENT of H. Foster Bain of California as director of the Bureau of Mines is anticipated by those in close touch with the Interior Department. Secretary Fall would probably have recommended the appointment before now except for the press of other business which demanded his immediate consideration. Mr. Bain is now acting director, and has been since the resignation of Dr. F. G. Cottrell, and the statement was recently made from Secretary Fall's office that "things are getting along so well that the Secretary is not worrying in the least about the Bureau of Mines."

BUREAU OF MINES APPROPRIATION REMAINS STATIONARY

NO NEW WORK was provided for in the appropriation made by the last Congress for the Bureau of Mines during the fiscal year 1922, which begins July 1, 1921. Except for the enforcement of the Leasing Act, which was not included in last year's budget, and in two other minor instances, the appropriation for next year is a duplicate of that of the current year.

The Bureau had included in its estimate figures to cover the inauguration of a vast fuel inspection system, the purchase of a mine rescue car, the construction of a building for the Fairbanks, Alaska, experiment station and the purchase of experimental mine land and additional ground for the Pittsburgh station. All these items failed.

The merits of the various items for which appropriations were not granted were not considered. The policy of the Appropriations Committee was to make no appropriations for new work which had not first been approved by the proper legislative committee. There was not sufficient time for this to be done before Congress adjourned.

Appropriations for the Bureau for the current year, including the \$60,000 deficiency appropriation for supervision of the Leasing Act, totaled \$1,362,642. The appropriation for next year totals \$1,439,300. This includes \$132,000 for supervision of the Leasing Act, which cannot be considered an increase because it was long ago foreseen that this amount would be required this year and agreed that it should be appropriated. Excluding this item, the increase in the appropriation for the fiscal year 1922 consists of \$325 to help the Alaska inspector meet the high cost of living and \$5,333 for increased transportation expense of mine rescue cars, or a total of \$5,658. This is offset by an item of \$1,000 for rent of land for rescue cars, which was included in this year's appropriation but was not asked for next year. The actual increase in the appropriation for 1922 is \$4,658.

The appropriation for 1922 follows:

Bureau of Mines Appropriations, 1922

General expenses	\$ 76,900
Mine accidents	409,065
Testing fuel	142,510
Mineral mining	125,000
Petroleum and natural gas	135,000
Expenses mine experiment stations	200,000
Care new building Pittsburgh station	50,000
Operating mine rescue cars	160,000
Inspecting mines in Alaska	7,325
Books and publications	1,500
Supervision of Leasing Act	132,000
Total	\$1,439,300

The above is identical with the appropriation for this year except, as stated, the appropriation of \$1,000 for land for rescue cars is not included, while the item for Alaska inspection is $325 larger and the item for increased cost of transporting mine-rescue cars is $5,333 larger.

Items in the 1922 budget which were not provided for in the appropriation were: purchase of mine rescue car, $45,000; building for Fairbanks, $75,000; purchase of experimental mine land, $18,000; land for Pittsburgh station, $28,000; fuel inspection, $725,000; construction of garage, $150,000; fuel purchases, $75,000.

LEASING ACT ENFORCEMENT OFFICIALS ANNOUNCED BY BUREAU

FOLLOWING the making of an appropriation of $60,000 by Congress on the last day of the recent session for supervision of the leasing act of February 25, 1920, the Bureau of Mines early last month announced plans for carrying out the work contemplated. The appropriation was a deficiency appropriation and will carry on the work until July 1. Heretofore the Bureau of Mines has been compelled to assign an engineer, assistant supervisors, gaugers, and oil clerks who are badly needed in other work.

F. B. Tough has been made chief supervisor of oil and gas, with headquarters at Denver. He will report direct to the chief petroleum technologist at Washington District engineers and supervisors, also gaugers and clerks, have been placed at Casper, Wyoming, Winnette, Montana, Bakersfield, California, and Shreveport, Louisiana. They will report direct to Mr. Tough.

George S. Rice, chief mining engineer, will be in immediate technical charge of leases dealing with coal, phosphate, oil shale, and sodium operations. The work will be handled in the field by a chief mining supervisor whose office will be at Denver, and who in turn will have one district mining supervisor.

Operating and safety regulations for coal mining operations have already been approved and will soon be published. Similar regulations for mining of other minerals are now being prepared.

The operating regulations governing oil and gas leases require that the supervisor and his deputies shall visit all operations for the discovery and production of oil and gas, with a view to preventing waste and damage and injury to life or property. The supervisor in the case of oil operations will also determine the quality of oil produced, which is one of the factors upon which the payment of royalties is based.

LAND OFFICE AND GEOLOGICAL SURVEY APPROPRIATIONS FOR YEAR

GEOLOGICAL SURVEY appropriations for the fiscal year 1922 totaled $1,640,340. The budget includes the following:

Geologic surveys, $352,000; topographic surveys, $330,000; chemical and physical researches relating to geology, including researches to determine geologic conditions favorable to the presence of potash salt deposits, $40,000; reports of mineral resources, $125,000; investigation of mineral resources of Alaska, $75,000; gauging streams, determining water supply, investigating underground currents and artesian wells and compiling reports on utilization of water resources, $180,000; publication of geologic maps, $140,000.

The appropriation for investigation of Alaskan mineral resources was made available at once so as to permit of work during the spring.

Appropriations for the maintenance of the General Land Office included the following:

For consolidation of offices of registers and receivers and compensation of registers and receivers, $450,000; contingent expenses, $400,000; execution of laws governing cutting of timber, protecting lands from illegal entry and adjusting swamp land claims, $550,000; hearings to determine character of lands and legality of entries, $25,000; surveys and resurveys of public lands, examination of surveys heretofore made and reported defective or fraudulent and inspecting mineral deposits, coal fields and timber districts, $700,000; monuments for public land corners, $70,000.

PRESIDENTIAL APPOINTMENTS

THE FOLLOWING appointments of interest to the mining industry have been made by President Harding:

Judge Edward C. Finney, Kansas, First Assistant Secretary of the Interior.

Former Governor William Spry, Utah, commissioner of the General Land Office.

John J. Esch, Wisconsin, and M. W. Potter, New York, members Interstate Commerce Commission.

D. R. Crissenger, Ohio, Comptroller of Currency.

Carl Mapes, Michigan, Solicitor of Internal Revenue.

James A. Fowler, Tennessee, assistant attorney general.

Guy D. Goff, West Virginia, assistant attorney general.

W. W. Husband, Vermont, immigration commissioner.

Thomas W. Miller, Delaware, alien property custodian.

William S. Culbertson, Kansas, and Thomas O. Marvin, Massachusetts, members of Tariff Commission.

Eugene Meyer, Jr., New York, director War Finance Corporation.

COMMITTEE ON OIL STANDARDS NOW ON PERMANENT BASIS

ORGANIZATION of the Interdepartmental Committee on Standardization of Petroleum Specifications, authorized by President Woodrow Wilson in January, was perfected by Secretary of the Interior John Barton Payne during the last week he was in office.

The committee is composed of Dr. H. Foster Bain, Bureau of Mines, chairman, representing the Department of the Interior; J. H. Yawter, office of the supervising architect, representing the Treasury Department; Captain Wm. H. Lee, Q.M.C., office of the Quartermaster General, representing the War Department; Commander H. A. Stuart, Bureau of Engineering, representing the Navy Department; E. B. Cranford, assistant superintendent, division of post-office service, representing the Post Office Department; B. A. Anderson, Bureau of Public Roads, representing the Department of Agriculture; Dr. C. W. Waidner, Bureau of Standards, representing the Department of Commerce; W. A. E. Doying, inspecting engineer, representing the Panama Canal; M. W. Bowen, assistant to the chairman, representing the Shipping Board.

This new committee has superseded the war-time committee on the same subject. The war-time committee was at first under the Fuel Administration and was later transferred to the Bureau of Mines. It standardized the many specifications for petroleum products in use by the government. This committee did not represent all of the departments of the government and was not intended to be permanent.

The first action of the new committee was to approve Bulletin 5 of the old committee, thereby continuing in force the specifications on gasoline, kerosene, fuel oils, lubricating oils, signal oils and all other oils included in the bulletin.

MAKING THE COAL MINES SAFE FOR COAL MINERS

FATALITIES per million tons of coal produced were fewer in 1920 than at any previous period in the world's history. The death rate was 3.50 per million tons of coal produced, which was little more than half that of 1907, and represented a drop of more than 18 per cent. as compared with the fatality rate of 4.28 per million tons in 1919. And the 1919 record a few years previously would have been considered very fine.

The production record is considered in many respects the most accurate gauge for mine accidents and fatalities. Equating accidents to the number of men employed is not considered the best system for making comparisons, because many miners work less than a year, some during short and some during longer periods.

Another equitable method of testing the results of efforts to make coal mining safe for coal miners is found in comparing the number of tons produced for each man killed during two or more years. Last year 285,700 tons of coal were produced for every man killed. This was 50,000 tons more than the production-per-death record of 1919 and 23,000 tons more than that of 1918, which at that time was the best record which had ever been hung up.

Many factors have contributed to the lessening of the dangers which beset the daily work of the coal miner. Chief among them is the work of the United States Bureau of Mines. But back of this work was the humanity of the American mine operator, who was first to decide that something ought to be done to protect the life and limb of mine workers and that he, the boss, was the one who ought to do it. And he did it, paying the expense of installing new machinery and educating his employes before there were laws compelling him to do so. To this day the most up-to-date mining enterprises are several laps ahead of the law in this respect.

The operators, working through their organization, the American Mining Congress, succeeded in bringing about the establishment of the Bureau of Mines in 1910. Dr. Joseph A. Holmes, the bureau's first director, from the date of his installation in office made the effort to reduce the number of mine accidents and fatalities one of the chief concerns of the bureau. The Joseph A. Holmes Safety Association, afterwards organized, was named in his honor and in recognition of his services in this respect. This association is more active today than ever before, and during the last month has decided to institute chapters in the different mining centers of the United States and Alaska.

The Bureau of Mines operates ten mine-rescue cars which visit mining communities, giving practical demonstrations of first aid work and training men in both first aid and mine safety operations. Those who take the training generally form local organizations. There are approximately four-score such organizations in the country. Many mines and mining communities boast of first aid and rescue teams trained, drilled and equipped to a point not exceeded by the best in the United States army. Once a year these teams from all parts of the country hold contests which attract international interest. The last of such contests was held during the twenty-third annual convention of the American Mining Congress, in Denver.

Laboratory work in behalf of the prevention of mine accidents is carried on continually at the Pittsburgh experiment station of the United States Bureau of Mines. The three most important phases of its work are the establishment of permissible explosives for use in gaseous and dusty mines, the development of electrical equipment which can be used safely in gaseous and dusty mines, and improvement of the safety of mechanical devices used about any and all mines.

Explosives tested by the Bureau of Mines are the only explosives used by the industries of the United States whose quality is first tested and then certified by the United States government. All such explosives which win the official designation of "permissible" are considerably less sensitive than other high explosives and black blasting powder, but they "do the work," nevertheless. The principal use of permissible explosives is in coal mines, although about fifteen percent. of all such explosives used in 1919 were for other purposes. The result of the use of permissible explosives in bituminous coal mines was to reduce the number of fatalities at once. Between 1903 and 1910, fatalities caused by explosives were never fewer than .2 per thousand men employed. After 1910, the number of fatalities from the same cause never exceeded .138 per thousand men employed. In 1917, the fatality rate per thousand employes was only .091.

Time was when any lamp which would burn was satisfactory for use in a coal mine. Today more than 200,000 officially approved electric miners' lamps are in use in coal mines, and in many mines the old open flame lamp, which was always a fire hazard even where there

Coal Mine Fatalities, 1907-1920, Show Steadily Diminishing Rate

Year	Production (Short tons)	Employed	Killed	Rate per 1,000 Employes	Rate per 1,000 300-day Workers	Killed per million tons	Production per death (Short tons)
1907	480,363,424	680,492	3,242	4.76	6.19	6.78	147,407
1908	415,842,698	690,438	2,445	3.54	5.45	5.97	167,407
1909	460,814,616	666,552	2,642	3.96	....	5.73	174,416
1910	501,596,378	725,030	2,821	3.89	5.31	5.62	177,808
1911	496,371,126	728,348	2,656	3.65	4.97	5.35	186,887
1912	534,466,580	722,662	2,419	3.35	4.46	4.53	220,945
1913	570,048,125	747,644	2,785	3.73	4.70	4.89	204,685
1914	513,525,477	763,185	2,454	3.22	4.66	4.78	209,261
1915	531,619,487	734,008	2,269	3.09	4.44	4.27	234,297
1916	590,098,175	720,971	2,226	3.09	3.93	3.77	265,094
1917	651,402,374	757,317	2,696	3.56	4.25	4.14	241,618
1918	678,211,904	762,426	2,580	3.38	3.94	3.80	262,873
1919	546,155,000	*765,000	2,317	*3.03	....	4.24	235,700
1920	645,663,000	*775,000	2,260	*3.00	....	3.50	285,700

*Estimated.

was no gas, has become only a memory, and a faint memory. The electrical section of the Pittsburgh experiment station has also carried out investigations on motors, rheostats, controllers and switches, shot-firing equipment and storage battery locomotives.

The safety work of the Bureau of Mines, notwithstanding its accomplishments, is vaster and more varied today than ever before. Investigations are now being carried on in regard to safety catches for mine cages, gates for safeguarding mine shafts; standard platforms, railings and tow boards; safe practices for steam engines, boilers and ladders used about mines; haulage equipment, caging devices; safe construction of cages and skips; deterioration of wire ropes; belts for power transmission, and proposed code for mechanical equipment for coal mines.

C. LORIMER COLBURN

Mr. Colburn joined the Washington force of the Bureau of Mines as a war worker in 1918. Two months later he was commissioned a captain of engineers. He returned to the Bureau early in 1919 and was soon made assistant chief mining engineer. Recently appointed chief of mine safety co-operative work.

The government's approval is given not only to general classes of machinery considered safe, but even to individual devices, and every piece of equipment so inspected has imprinted upon it the seal of the Bureau of Mines. There is no more excuse for having unsafe electrical equipment in a coal mine today than there is for purchasing a quarter of beef which has not been properly inspected and approved. State mining departments are depending to a greater extent every year upon the Bureau of Mines for information and guidance upon safe equipment, since very few states possess men or facilities for carrying on such work, while the Bureau of Mines possesses the best in the world.

The average mining engineer is perfectly competent, and the average mine owner is willing, to select only safe machinery and use only safe explosives and other materials, but their duties lie in another direction—that of producing and marketing. It is wise for them to rely upon the guidance of experts who think of little else.

SAFETY COUNCIL CO-OPERATES WITH MINES BUREAU

ABOUT EIGHTY METAL MINES and nearly two-hundred coal mines, constituting all who affiliate with the National Safety Council, will receive the benefit of personal contact with the United States Bureau of Mines in their safety efforts as a result of a co-operative agreement entered into during the last month between the Bureau and the Council. C. Lorimer Colburn, assistant chief mining engineer at the time the agreement was made, was detailed as mining engineer to devote his entire time to putting it into effect.

The element of personal contact with an expert but disinterested outsider is expected to have an immediate stimulative effect upon mine operators, with whom Mr Colburn will deal mainly, and upon their employes, whom he will address upon occasions. Heretofore Bureau of Mines safety work, except that done by crews on mine rescue cars, has been rather impersonal in nature. Its nearest approach to a direct appeal to mine operators consisted in the sending of safety and first aid bulletins, which all too frequently suffered the fate of most bulletins—consignment to the waste basket or file room. Notwithstanding the remarkable record which the Bureau's safety work has made, it has long been felt that a more direct appeal to, and a more personal relation with, mine operators would be followed by a marked reduction in the number of mine fatalities and injuries.

The National Safety Council, before entering into the agreement with the Bureau of Mines, conducted a referendum, and more than two-thirds of the ballots cast by its members were favorable to the co-operative agreement.

Mr. Colburn has already taken up his new work. He has practically completed mapping out his plan of campaign. First, he will visit the National Safety Council's headquarters and familiarize himself with the work of its mining section. The co-operative agreement provides that he will then "visit the mining company members of the National Safety Council and acquaint such members with the scope of the technical safety service available to them through this co-operative agreement; familiarize himself with the best methods of preventing accidents as demonstrated by the mining companies who are most advanced in this respect; establish cordial relations with the mine superintendents and foremen at the operations he visits and, as occasion permits, disseminate suggestions looking to improved practices, which shall be free from criticisms of the practices he finds; collect photographs, blue prints, sketches and other information suitable for the preparation of "Safe Practices" leaflets of the National Safety Council and bulletins, technical papers and other publications of the Bureau of Mines; co-ordinate and develop the safety work of the mining section of the National Safety Council with the safety work of the Bureau of Mines; disseminate among the operators, foremen and workmen in the mining industry, by personal visits and orally, with more concrete application and detail than written communications would probably provide, the arguments for and against increased or new activity along any lines of endeavor or research looking to increased safety in the mining industry."

DECREASE IN NUMBER OF ACCIDENTS AT METALLURGICAL PLANTS

FEWER MEN WERE EMPLOYED and fewer were injured in American metallurgical works in 1919 than in 1918. Figures compiled by the Bureau of Mines have just been announced.

Altogether 60,187 men were employed, of whom 8,045 were injured and 62 were killed. The accident rate was 127.10 injured and .98 killed per thousand 300-day workers, during 1919. There was a decrease of 19,565 in the number of workers, 32 in the number of fatalities and 4,648 in the number of injuries, as compared with 1918.

Of the total number of accidents reported, 25 fatalities and 2,052 injuries occurred at ore dressing plants, 32 fatalities and 4,394 injuries at smelters and 5 fatalities and 1,599 injuries at auxiliary works.

The number killed and injured per thousand 300-day workers from 1913 to 1919 is shown in the following table:

Accidents at Metallurgical Plants, 1913-1919

	300-day workers	Average days active	Total number killed	Number killed per 1,000 300-day workers	Total number injured	Number injured per 1,000 300-day workers
Ore-dressing plants:						
1913	16,154	323	16	0.99	1,977	122.38
1914	15,225	302	23	1.51	1,434	94.19
1915	19,107	309	30	1.57	2,095	109.65
1916*a*	23,470	315	33	1.41	3,184	135.66
1917*a*	24,372	303	47	1.93	2,952	121.12
1918*a*	22,517	310	35	1.55	3,142	139.54
1919*a*	16,708	293	25	1.50	2,052	122.82
Smelting plants:*b*						
1913	24,309	355	47	1.93	4,247	174.71
1914	32,336	348	33	1.02	5,673	175.44
1915	36,262	347	38	1.05	5,718	157.69
1916*a*	49,363	338	36	.73	9,656	195.61
1917*a*	50,659	342	53	1.05	7,745	152.88
1918*a*	45,439	342	42	.92	6,743	148.40
1919*a*	30,917	326	32	1.04	4,394	142.12
Auxiliary works:						
1913, 1914, 1915*c*	......	......	......	......	......	......
1916	15,763	338	14	.89	2,240	142.10
1917	17,014	328	16	.94	2,881	169.33
1918	20,111	334	17	.85	2,808	139.63
1919	15,670	321	5	.32	1,599	102.04

*a*Not including auxiliary works, as shops, yards, etc.
*b*Exclusive of iron blast-furnaces.
*c*Not separately reported.

TENTATIVE PROGRAM FOR NEXT MINE RESCUE MEET ARRANGED

THE COLISEUM in St. Louis will be the scene of the next International Mine Rescue and Safety First meeting. It will be held on Thursday, Friday and Saturday, September 1-3. At the same time and place, a conference on the standardization of mine rescue methods will also be held.

Details of the meet were considered at a meeting on March 23 of F. J. Bailey, D. J. Parker, George S. Rice and E. A. Holbrook of the Bureau of Mines. The tentative program as arranged at this meeting calls for conferences on mine rescue methods Thursday morning and night and Friday morning, first aid contests Thursday and Friday afternoons, meeting of the Joseph A. Holmes Safety Association and awarding of safety medals Friday night, mine rescue contests Saturday morning and afternoon and awarding of championships in first aid and mine rescue contests Saturday night.

HOLMES SAFETY ASSOCIATION TO EXTEND ITS ACTIVITIES

PLANS OF THE BUREAU OF MINES for the establishment of local chapters of the Joseph A. Holmes Safety Association were adopted unanimously at the annual meeting of the organization in Washington on March 5. A paid secretary will be employed and the work will begin as soon as practicable.

The March meeting was held to hear the report of a committee appointed at a meeting held in November, upon which occasion the proposal of the Bureau of Mines that the Joseph A. Holmes Safety Association should establish local chapters was first presented. It was brought out at the November meeting that as a result of the first aid and mine rescue training work of the Bureau of Mines, local and unattached safety societies had been organized in many mining communities. It was shown that in many places the interest which had been aroused by the Bureau of Mines training work had waned after the local organizations had functioned for a few months, and that it would be necessary to consolidate all these local organizations if their activities and the work of the mine rescue cars were to be made of permanent value. At the November meeting a committee was appointed to consider the recommendation of the Bureau of Mines and report to the executive committee at the next annual meeting. This committee consisted of E. A. Holbrook, then the acting director of the Bureau of Mines and acting president of the Joseph A. Holmes Safety Association; James Lord and Edgar Wallace, representing the American Federation of Labor; and George S. Rice, representing the American Institute of Mining and Metallurgical Engineers.

This committee at the annual meeting of the Joseph A. Holmes Safety Association held on March 5 recommended that the plan of the Bureau of Mines be adopted. There were present at this meeting the following: E. A. Holbrook, acting director of the Bureau of Mines and acting president of the Association; George S. Rice, American Institute of Mining and Metallurgical Engineers; Dr. David T. Day, secretary of the Association and representative of the American Mining Congress; James Lord and A. E. Holder, American Federation of Labor; Dr. R. B. Moore, American Chemical Society; R. B. Sosman, American Ceramic Society; General W. H. Bixby, American Society of Mechanical Engineers and the American Society of Testing Materials; J. W. Paul, Mine Inspectors Institute; David White, National Academy of Sciences; O. P. Hood, Society for the Promotion of Engineering Education; W. W. James, United Mine Workers of America; and W. D. Ryan, representing the United States Bureau of Mines.

The plan approved by the committee includes the following provisions:

1. That the Joseph A. Holmes Safety Association institute local chapters throughout the United States and Alaska to aid and promote among mine workers and mine officials the movement for first aid, safety and sanitation.

2. That a paid secretary be employed, with authority to employ assistants as need arises and funds become available.

3. That definite plans for permanent organization be formed by a committee representing the National Coal Association, the American Mining Congress, the United Mine Workers of America, the Mine, Mill and Smelter Workers, the National Safety Council and the director of the United States Bureau of Mines. The executive officer of each of these will be requested to appoint a representative on the committee.

There are at present about eighty local and unattached safety organizations which will be eligible to membership, and whose work will thereby be consolidated, strengthened and made permanent. Tentatively, it is proposed that membership will be granted to national mining associations, chapters of employers and employes, state and county mine inspectors, and individuals. An individual to be eligible must possess a first aid certificate signifying he has taken the course of training prescribed by the United States Bureau of Mines.

Local chapters of 100 members, or less, will pay $3 a year, and those with more than 100 members, $10 a year. Individuals who hold membership other than through local chapters will pay $1 a year.

The duties of local chapters shall consist of encouraging their members to become proficient as first aid workers, promoting at all times and in all places the gospel of safety first and holding meetings at regular intervals for discussion of better methods of safety, health and sanitation.

The report of the treasurer to the annual meeting showed approximately $10,000 in the permanent fund of the Joseph A. Holmes Safety Association. Nine medals for heroism were awarded last year, making twenty-three in all. Twelve were approved for presentation this year.

QUARRY ACCIDENTS FOR SEVEN YEARS

A SMALL DECREASE in the number of fatalities and injuries received at quarries in 1919 as compared with the year before, is shown in reports received by the Bureau of Mines from 1,724 operators. The number of employes in 1919 was 75,505, of whom 9,199 were injured and 123 were killed.

The number killed and injured per thousand 300-day workers from 1913 to 1919 is shown in the following table:

Quarry Accidents, 1913-1919

Year	300-day workers (calculated)	Number killed		Number injured	
		Total	Per 1,000 300-day workers	Total	Per 1,000 300-day workers
1913	87,141	183	2.10	7,739	88.81
1914	68,187	180	2.64	7,836	114.92
1915	82,447	148	1.80	9,671	117.30
1916	76,457	173	2.26	13,427	175.62
1917	71,525	131	1.83	13,242	115.14
Average for five years	77,151	163	2.11	10,383	134.58
1918	59,285	125	2.11	8,719	147.07
1919	63,794	123	1.93	9,199	144.20

APPROVED EQUIPMENT WILL CARRY SEAL OF INTERIOR DEPARTMENT

FOLLOWING THE ISSUANCE a fortnight ago of the first approval for a storage battery locomotive for use in gaseous mines, the Bureau of Mines announced that each approved equipment as sold by the manufacturer would carry on its controller bearing an approval plate bearing the seal of the Department of the Interior. The plate will also include a caution statement intended to induce the purchaser and state inspectors to keep the locomotive in permissible condition. It is the belief of bureau officials that the use of storage battery locomotives conforming to specifications will eliminate many of the hazards of trolley locomotives and old types of storage battery locomotives.

SKELETON TRADE BODIES FAVORED BY BERNARD M. BARUCH

RECOMMENDATION for the maintenance of a skeleton organization along the lines of the War Industries Board was made in the final report of Bernard M. Baruch, the board's chairman, which report was made public by the Council of National Defense late in March.

Mr. Baruch holds that "great public benefits in the way of prices and abundance of goods, resulting from economy in production and distribution, are capable of being effected through the mutual co-operation of members of industrial groups, and that the present governmental policy of enforced isolation and costly competition is not conducive to the general welfare."

Mr. Baruch points out that the association of vast industries, which results in benefits to the country, also results in the power which may tend toward potential injustices, and it was for this reason that he recommends, "that there be created some form of government agency which shall supervise such associations, both for the purpose of promoting their beneficent possibilities and checking their opposite potentialities."

The conservation program of the War Industries Board reached hundreds of industries, thousands of plants and millions of consumers. Mr. Baruch holds that in the canning industry 260,000 tons of tin plate were saved annually through substitutions. The winding of 200 yards of thread on one spool instead of 150 released 600 freight cars annually. Eliminating the use of tin for putting the rustle into silk saved 50 tons of tin annually. Packing certain dry goods in bales instead of boxes saved 17,312 carloads of freight space, 140,000 cartons and nearly 500,000 wooden packing cases. Numerous other instances of great saving are mentioned as having resulted through economies in material, labor and time, simplification and restriction of styles, models and fads, and abolition of useless services and practices.

Lengthly reference is made by Mr. Baruch to government price-fixing. Among the results mentioned are reduction of ship plates from $12 to $3.25 per hundred; pig iron from $60.00 to $33.00 a ton; coke from $12.75 to $6.00; copper from 37 cents to 16.67, 23.5 and 26 cents per pound, zinc from 22.5 to 12 cents a pound.

The report does not attempt to estimate savings either to the government or to the public from price-fixing, but it states that independent estimates have placed the savings in iron and steel alone at more than three billion dollars.

The Council of Defense's summary sets out that the experience of the War Industries Board shows the need of three preparedness measures against some future war. These are (1) a peace time skeleton organization along the lines of the War Industries Board to keep the government posted and in touch with industry, and be the nucleus for immediate enlargement; (2) the stimulation of domestic production of military necessities, and (3) encouragement of certain war industries to maintain skeleton organizations through which they could rapidly expand in the production of guns, airplanes, munitions and other military equipment.

The summary concludes that "there should be established some sort of government tribunal which should sanction in the public interest the intimate associations of industries which resulted in such economies and enlargement of production during the war. The report, therefore, recommends that purely as a civic measure legislation be adopted that will permit the continued functioning of the industrial groups represented by the war service committees and the related associations of manufacturers, whose establishment was forced by the war exigency."

REFINERY STATISTICS FOR 1920—ANALYSIS OF YEAR'S OIL ACTIVITIES

CRUDE OIL PRODUCTION in the United States during 1920, estimated by the Geological Survey last month, was 443,402,000 barrels, or a daily average of 1,211,481 barrels. On December 31, 1920, there were 328 refineries operating with a daily crude capacity of 1,714,395 barrels. The daily average refinery capacity exceeded the average daily production of crude by 677,000 barrels.

Great increases in production, domestic consumption and exportation of gasoline, lubricating oils and gas and fuel oils characterized the year. Only in the production and exportation of kerosene was there an appreciable falling off. The increase in exports and shipments of gasoline during the year was 72 percent over 1919 and 15 percent over 1918, and domestic consumption was 24 percent greater than that of 1919.

The daily average gas and fuel oil production was 3,000,000 gallons greater than in 1919, daily average domestic consumption 1,085,158 gallons greater and daily average exports and shipments 2,000,000 gallons greater.

Daily average production of lubricating oils in 1920 was 540,000 more than that of the year preceding, daily average domestic consumption 113,026 gallons more and daily average exports and shipments 365,691 gallons greater.

Details of oil run to refinery stills during the year are shown in the following table:

Details of Refinery Operations, 1920

1920	Crude Oil (bbls.)	Other Oils* (bbls.)	Total Oils Run (bbls.)
January	30,815,160	3,098,347	33,913,507
February	29,208,723	3,301,074	32,509,797
March	33,592,004	3,182,841	36,774,845
April	32,852,040	2,829,373	35,681,413
May	34,578,282	3,194,100	37,772,382
June	34,906,078	3,706,180	38,612,258
July	37,024,052	3,076,269	40,100,321
August	39,757,770	3,460,601	43,218,371
September	40,549,316	2,826,856	43,376,172
October	40,687,250	3,169,768	43,857,018
November	39,458,945	3,978,417	43,437,362
December	40,485,409	4,410,765	44,896,174
Total	433,915,029	40,234,591	474,149,620

*Includes crude purchased and re-run, the refineries' own oils re-run and casing-head gasoline.

The above refinery operations resulted in output as follows:

Output of Refineries, 1920

Gasoline, gals	4,882,546,599	Wax, lbs	541,404,537
Kerosene, gals	2,320,095,443	Coke, tons	576,613
Gas and fuel, gals	8,861,451,931	Asphalt, tons	1,290,614
Lubricating, gals	1,046,708,349	Miscellaneous, gals	1,492,583,526
		Losses, bbls	18,742,939

Under the heading of "miscellaneous" as contained in the above table the following was produced (unit of gallons):

Miscellaneous Refinery Output, 1920

Miscellaneous Oils	Gallons	Miscellaneaus Oils	Gallons
Binder	1,785,750	Pitch	242,450
Flux	34,709,945	Residue	6,465
Medicinal Oils	1,375,081	Slops	837,468
Paint Products	351,296	Tailings	5,907,466
Petrolatum	6,793,998	Tar	4,681,633
Road Oil	60,789,322	Tops	107,900,864
Roofers Wax	177,148	Unfinished	451,266,916
Sludge Products	19,230,247	Wash Out	32,649
Acid Oil	5,379,291	Wax Tailings	3,417,027
Bottoms	13,880		
Distillates	787,684,630	Total	1,492,583,526

Comporative Oil Statistics, 1918-1920

The comparative analysis of production and consumption for the last three years for gasoline, kerosene, gas and fuel oil, and lubricating oils, is shown in the following tables (unit of gallons):

GASOLINE

Income	*1920*	*1919*	*1918*
Stock, January 1	446,793,431	297,326,983	412,256,833
Production	4,882,546,649	3,957,857,097	3,570,312,963
Imports	46,066,110	8,520,169	12,899,350
Total	5,375,406,190	4,263,704,249	3,995,469,146
Outgo			
Exports	635,247,487	365,883,011	556,422,334
Shipments to insular possessions	21,348,911	16,217,081	12,209,957
Domestic Consumption	4,256,427,955	3,434,810,726	3,129,509,872
Stocks, December 31	462,381,837	446,793,431	297,326,983
Total	5,375,406,190	4,263,704,249	3,995,469,146

KEROSENE

Income	*1920*	*1919*	*1918*
Stocks, January 1	339,319,690	380,117,829	497,750,082
Production	2,320,095,443	2,341,632,164	1,825,360,137
Imports	....	....	....
Total	2,659,415,133	2,721,749,993	2,323,110,219
Outgo			
Exports	848,212,146	965,415,225	484,613,905
Shipments to insular possessions	19,908,094	20,272,439	11,830,802
Domestic Consumption	1,398,223,970	1,396,742,639	1,446,547,683
Stocks, December 31	393,070,923	339,319,690	380,117,829
Total	2,659,415,133	2,721,749,993	2,323,110,219

GAS AND FUEL

Income	*1920*	*1919*	*1918*
Stocks, January 1	714,124,455	659,001,357	577,899,112
Production	8,861,451,931	7,627,288,566	7,321,397,557
Total	9,575,576,386	8,286,289,923	7,899,296,669

GAS AND FUEL—(*Continued*)

Outgo	*1920*	*1919*	*1918*
Exports	*1,933,659,336	1,174,166,557	1,477,085,287
Shipments to insular possessions	99,742,902	107,630,830	43,986,549
Domestic Consumption	6,704,769,734	6,290,368,081	5,719,223,476
Stocks, December 31	837,404,414	714,124,455	659,001,357
Total	9,575,576,386	8,286,289,923	7,899,296,669

LUBRICATING

Income	*1920*	*1919*	*1918*
Stocks, January 1	137,318,934	138,853,574	136,856,348
Production	1,046,708,349	846,760,017	841,465,767
Total	1,184,027,283	985,613,591	978,322,115
Outgo			
Exports	408,920,890	276,051,479	256,300,689
Shipments to insular possessions	4,833,627	3,860,199	2,615,666
Domestic Consumption	609,750,289	568,382,979	580,552,186
Stocks, December 31	160,522,477	137,318,934	138,853,574
Total	1,184,027,283	985,613,591	978,322,115

Figures on exports and shipments are taken from the Bureau of Foreign and Domestic Commerce.

*Includes fuel or bunker oil for vessels engaged in foreign trade—for year 1918, 6,603,043 barrels; 1919, 14,031,356 barrels; 1920, 26,334,883 barrels.

GOVERNMENT TO COLLECT WYOMING ROYALTIES IN OIL

WYOMING LESSEES were notified by Commissioner Clay Tallman on March 5 that the government would thereafter collect all royalties from that state in oil, to be delivered to the order of the United States Shipping Board. The notification was issued as a supplement to the following order which had been promulgated on March 2:

All oil and gas lessees of lands in States other than Wyoming are notified that until the receipt of orders to the contrary all royalties accruing to the Government for oil and gas produced under Government leases shall be paid each month to the Receiver of Public Moneys of the proper United States Land Office.

Lessees of lands in Wyoming will likewise pay in money all royalties accruing *under the leases* from the *date of the lease* up to the month within which the executed lease is *delivered*, and thereafter Wyoming lessees will be required to pay their royalty in oil.

Such payment of royalty in money as above provided will be accompanied by a statement showing:

1. As to oil produced:
   (a) The amount of production for the month under the lease.
   (b) The number of wells from which such production was made.
   (c) The grade of the oil produced.
   (d) Value or price of the oil and amount due the Government as royalty.
2. As to gas and casing-head gasoline produced:
   (a) The total production under the lease.
   (b) The value thereof and royalty due the Government.

This statement should be under oath of the lessee or the superintendent or other officer or agent of the lessee having personal knowledge of the facts.

A copy of the statement above provided for should, at the same time, be mailed to the Deputy Supervisor of Oil and Gas Operations of the U. S. Bureau of Mines, Custom House, Denver, Colorado, until further notice. In due time division offices will be established by the Bureau of Mines for this purpose, of which lessees will be duly notified.

Lessees (except as above provided for in Wyoming) will be notified when the Government desires to take its royalty in oil, in which case the required statement need only be sent to the Deputy Supervisor of Oil and Gas Operations of the Bureau of Mines as above provided. Later on, forms will be furnished by the Bureau of Mines for these statements, but until so furnished lessees will prepare their own statements in the usual way, covering the data above mentioned.

PETROLEUM EXPERMIENT STATION WORK COMMENDED

WORK OF THE PETROLEUM STATION of the Bureau of Mines at Bartlesville, Oklahoma, has evoked the highest commendation from the oil and gas committee of the Mid-Continent Oil and Gas Association. The president of the association has communicated with the members of the Oklahoma Legislature asking their support for an appropriation of $75,000 to be expended at the station.

The Bartlesville station is the only petroleum experiment station in the United States. At the time of its establishment, Governor Williams of Oklahoma promised that that state would duplicate appropriations made by the federal government for its maintenance. At the present time the federal appropriation amounts to approximately $40,000 a year and an additional appropriation of $34,000 was requested of the last Congress. In his letter to the Oklahoma legislators the president of the Mid-Continent Oil and Gas Association pointed out that the state of Oklahoma should encourage and foster engineering research and investigative work, for which the Bartlesville station was excellently equipped. He said the station was in a position to carry on additional investigations as soon as funds were made available.

"The Bureau of Mines station at Bartlesville has demonstrated that it can be of immense value to both the state and industry," the oil and gas association president said in his letter to the Oklahoma legislators. "Bureau of Mines engineers working in one field in Oklahoma raised the settled production 150 barrels per day on one property; in another field, wells drilled on recommendation of bureau engineers on lands heretofore thought unproductive yielded an initial daily production of 600 barrels; in another case equipment installed upon recommendation of bureau increased the yield of casing-head gasoline from six plants alone by 600,000 gallons in 1920, and a method developed in the bureau laboratories for treating casing-head gasoline will increase the value of the products of one company alone by $7,500 per month. These represent a few of the accomplishments of the Bartlesville Experiment Station that have come to my attention and are indicative of the type of work that this organization can do."

Continuing his discussion of the usefulness of the station, the president said: "The state of Oklahoma derives a large revenue from the oil and gas industry. For the fiscal year ending June 30, 1920, the state received an income from the oil industry of $3,353,104.53 through its two-thirds of the three percent gross production tax. It seems reasonable to believe that the state could afford to contribute a small fraction of this income for conservation and increased recovery of oil and gas particularly since the state derives a direct benefit from work of this nature. Each barrel of crude oil saved means additional revenue to the state not only through the tax amounting to approximately 10 cents per barrel, but through the increased valuation of property within the state.

"It is very important that this work be extended and I am convinced that the state and industry will be many times repaid for the appropriation. The Mid-Continent Oil and Gas Association believes that the proposed appropriation should be granted and would appreciate your support of this bill."

The present appropriation of the state of Oklahoma for the Bartlesville station aggregates $25,000 and was intended to last two years.

MORE THAN 400 REFINERIES IN U. S.

A NEW DIRECTORY of refineries has been issued by the Bureau of Mines. It was compiled by H. F. Mason and shows the existence of 415 completed refineries as compared with only 373 last year. Forty-four refineries are in process of construction. Texas, with 70 refineries, has the largest number of operating plants; Oklahoma has 68; Pennyslvania, 51; and California, 39.

The daily capacity of all refineries now in operation is 1,888,800 barrels as against only 1,530,565 last year. The daily capacity of Texas refineries is 330,800 barrels; that of California refineries, 312,700 barrels; Oklahoma, 248,050 barrels; New Jersey, 215,500 barrels.

The directory also contains full data regarding the capacity and type of each plant.

JANUARY REFINERY STATISTICS

THE CRUDE RUN of refineries during January amounted to 39,637,382 barrels, and the total of oils purchased and re-run was 4,206,576 barrels, Bureau of Mines figures. Output during the month was: gasoline, 14,852,659 gallons; kerosene, 6,624,987 gallons; gas and fuel oil, 26,989,808 gallons; lubricating oil, 2,771,247 gallons; wax, 1,472,892 pounds; coke, 1,870 tons; asphalt, 2,602 tons; miscellaneous, 4,704,717 gallons. Losses amounted to 53,684 barrels.

WAR DEPARTMENT OIL PURCHASES

AWARDS for petroleum product purchases have been made by the War Department as follows: (deliveries to be made at various eastern points), 2,000 gallons gasoline (high grade), Valvoline Oil Co., 29 cents; 5,000 gallons gasoline, Standard Oil Company of New York, 29 cents; 35,000 gallons gasoline, Indian Refining Co., New York, 19 cents; light motor oil, 1,300 gallons, Atlantic Refining Co., Philadelphia, 31 cents; motor gasoline, 200,000 gallons, Indian Refining Company, 19 cents; kerosene, 1,000 gallons, Sinclair Refining Co., Chicago, 16 cents; medium motor oil, L. Stern, Baltimore, 35 cents; heavy motor oil, 500 gallons, Sherwood Brothers, Baltimore, 38 cents; motor gasoline, 2,000 gallons, Sinclair Refining Co., 27 cents; medium motor oil, 2,000 gallons, Sherwood Bros., 32½ cents; motor gasoline, 7,000 gallons, American Oil Co., Cambridge, Mass., 26 cents; motor gasoline, 9,000 gallons, Sinclair Refining Co., 27 cents; motor gasoline, 1,000 gallons, Sinclair Refining Co., 27 cents; motor gasoline 1,800 gallons, Sinclair Refining Co., 27 cents; motor gasoline, 3,700 gallons, Standard Oil Company of New York, 29 cents; gasoline, 6,050 gallons, Sinclair Refining Co., 27 cents; gasoline, 1,500 gallons, Standard Oil Company of New York, 29 cents.

CANNEL COAL YIELDS OIL

AN UNUSUALLY clean bed of cannel coal in southern Utah can be made to yield 70 gallons of oil to the ton, according to the results of experiments recently conducted by the Bureau of Mines. This coal lies in the Colob field between Cedar City and Kanarra and Mount Carmel, and is limited to a small area on the headwaters of the north fork of the Virgin River.

Increasing activity in oil shale led to the original investigation of the oil possibilities of this coal. The field can be reached only after great difficulty by wagon road. A new road is being constructed

SUPERPOWER SURVEY REPORTS ON WORK DONE TO DATE

BEFORE RETIRING from office, Secretary of the Interior John Barton Payne notified the President that the final report of the Superpower Survey would probably be made by June 30. With the notification was a statement of progress already made in the study of the power situation in the Boston-Washington industrial district.

One conclusion already reached, the Secretary reported, was that apparently one-third of the 36,000 miles of Class 1 railways within the district could be economically electrified. The coal consumption of these roads in 1919 was 19,000,000 tons. Electrification of one-third of the total mileage would save 6,000,000 tons, or $40,000,000 per year, and make a difference of $50,000,000 annually in favor of electric versus steam engine repairs and maintenance.

"The total cost of electrification will be approximately $40,000 per mile of main track, which with 12,000 miles to be electrified would cost $500,000,000," the report pointed out. "In addition, yard and siding trackage would call for $300,000,000, or a total of $800,000,000. This sum will cover the necessary construction and equipment for the railways beginning with the electric substations and with the driving wheel of their electric motive power. The electrification above outlined will displace approximately 7,000 steam locomotives, which at salvage value of $22,500 each will credit the electrification estimate with approximately $150,000,000, leaving a net investment of $650,000,000, which taken in connection with the afore-mentioned savings of $90,000,000 per annum would return approximately 14 percent on the investment."

A saving of 6,500,000 tons of anthracite would be effected annually, the report says. The commission is at present preparing estimates of the cost of completely electrifying the anthracite mines.

Another conclusion reached is that in 1930 the water power supply of the Boston-Washington district cannot exceed 25 percent of the total requirements. This fact, therefore, forces the conclusion that most careful consideration must be given to the efficient development of power from coal.

COAL PROSECUTIONS ENDED

ATTORNEY GENERAL PALMER, just before his retirement from office, ordered cessation of all the coal "profiteering" prosecutions in the country. Following the decision of the Supreme Court holding the Lever Act unconstitutional, he sent the following telegram to all his special assistants employed on such cases:

"In view of the decisions of the Supreme Court involving the Lever Act, the appointments of all special assistants to the Attorney General in charge of the Lever Act cases and investigations are terminated March 3. This applies to the office force of each special assistant. Please deliver all records of cases in your charge to the United States attorney of the jurisdiction in which the cases are pending."

Attorney General Daugherty immediately upon assuming office ordered the United States district attorneys to dismiss coal cases and all other prosecutions under the Lever Act. There were on the federal court dockets about 150 indictments charging coal profiteering. The new attorney general announced the Department of Justice would not institute any spite suits or seek to embarass any particular interests, but that it would seek to do justice to all and protect the government's interest wherever it might be endangered.

TIDEWATER COAL EXPORTATIONS TO BE ANALYZED AND CLASSIFIED

THE TIDEWATER COAL EXCHANGE, Inc., of New York, and the Bureau of Mines have entered into a co-operative agreement for the classification of coal shipped for export from the ports of New York, Philadelphia, and Baltimore. Limits of tolerances of quality for certain pools will be established, and the members of the Exchange will see that they are maintained.

The work contemplates the collection and analysis of samples both from shipments and direct from the mines, and the making of analyses at the Pittsburgh experiment station. The Tidewater Coal Exchange will make classifications upon the basis of the Bureau's analyses and assign coal to pools within the limits and tolerances as determined.

The co-operative agreement applies to coals from Pennsylvania and Maryland and the northern part of West Virginia. These districts ship about 32,000,000 tons of coal through the Tidewater Exchange per year. The purpose of the classification of coal by pools is to insure the maintenance of standards in export shipments from various American districts and to expedite transportation. Pooling of coals was resorted to during the war by a voluntary agreement of the operators and the railroads, and when hostilities ceased it was found to be profitable to continue the arrangement.

DROP IN METAL PRICES CONTINUES

CONTINUED RECESSION of wholesale prices of metals and metal products and of fuel and lighting costs is reported for February by the Bureau of Labor Statistics of the U. S. Department of Labor. Using 1913 averages as a base, the index number of metals and metal products, which was 189 in February last year, was only 146 during February this year, having dropped from 152 in January. The fuel and lighting index number, which was 228 in January, was 218 in February. The latter figure was higher than that of February a year ago, when the index number was 187.

The bureau's statistics show a reduction of 24.2 per cent. in the number of men on the payroll in the iron and steel industry, and a reduction of 33.2 per cent. in the amount of the payroll, in February as compared to the parallel month of 1920.

There were decreases in the number of persons employed in all industries, but that of bituminous coal mining, 2 per cent., was the smallest of all, save one. The lowest decrease was in cotton manufacturing.

Oil In By-Product Sands

From data collected by the United States Geological Survey, it is estimated that 2,359,000 barrels of oil, valued at more than $3,500,000, could be obtained from the sand piles about producing wells in California and from outcroppings in the vicinity of the fields. Also, it is claimed, many times that amount of oil might be recovered from seepage over the oil producing area. By seepage, in this case, is meant oil which is permitted to return into the ground or remain on the surface of oil-saturated sand.

DOLLAR COINAGE RENEWED.—Under authority of the Pittman Act, the coinage of silver dollars has been renewed at the Philadelphia Mint. The Pittman Act authorized the Secretary of the Treasury to take up and sell not to exceed 350,000,000 silver dollars. It also authorized their restoration by coinage of new silver dollars, but this authorization had not previously been acted upon.

TARIFF GIVEN RIGHT OF WAY IN EXTRA CONGRESS SESSION

THE FIRST MATTER to be taken up by Congress in the extra session beginning April 11 will be the tariff. Conferences between President Harding and House and Senate leaders have developed that Congressional action will take the following course:

1. Passage of the Emergency Tariff Bill on agricultural products, raw and manufactured.
2. Enactment of an anti-dumping law.
3. Passage of a bill requiring collection of tariff upon the basis of valuation at American ports of entry instead of upon valuation at foreign ports of departure.
4. Consideration of permanent tariff revision and passage of permanent laws.
5. Passage of taxation and revenue legislation.

It is considered possible that, after passage of the first three measures above outlined, Congress will then turn its attention to taxation and revenue measures and complete its task in this respect before enacting permanent tariff measures. But the only definite statement which can be made now is that emergency tariff legislation will certainly be given precedence over taxation.

Five sub-committees have been appointed for consideration of permanent tariff legislation. The Chemical Subcommittee is composed of Congressmen Longworth, Copley and Hadley; and the metals committee of Congressmen Tilson, Timberlake and Mott.

The seriousness of the results of permitting the dumping of foreign products upon the American market was attested by the fact that President Harding and his Cabinet gave personal consideration to this problem. After this conference it became known that anti-dumping legislation would be given a position well up toward the top of the Congressional calendar.

The immediate application to importations of American valuations at ports of entry would affect Germany and Japan, especially, since both countries are large manufacturers of goods intended solely for export. On such goods there are no home values because there are no home markets. The system of valuing imports at American ports of entry, if tried, will be watched with great interest as its results will furnish a scientific basis for the fixation of permanent tariff schedules.

The appointment of Thomas O. Marvin, of Boston, settles the question of the probable attitude of the new administration towards the Tariff Commission. As this body was primarily authorized under the Underwood Act by a Democratic Congress, its probable life under the Republican administration was in doubt. The appointment of Mr. Marvin would indicate that it is the purpose of the new administration to make the Tariff Commission essentially protective in its attitude and that its policy is to be in accord with that of the Ways and Means Committee. Mr. Marvin is not only an ardent protectionist, being the head of the Home Market Club of Boston, but is also an advocate of the levying of tariff duties upon the basis of American valuations.

ANTHRACITE SHIPMENTS FOR FEBRUARY

A NEW RECORD was established for anthracite shipments in February, when the total was 5,966,101 gross tons. The nearest approach to this total for February shipments was in 1912, when shipments totaled 5,875,968 tons, and the second nearest was in 1918, with a record of 5,812,082 tons. Although February was a short month, its shipments exceeded those of January by 225,563 tons. The record of February, 1920, was exceeded by 900,000 tons.

TANGLE IN RAILROADS' AFFAIRS WORRIES CONGRESS AND THE COUNTRY

By C. H. Farrell

THE TRANSPORTATION SITUATION, which was to be definitely settled by the return of the railroads to private operation and management and the passage of the Transportation Act, remains today in as chaotic a condition as it has ever been, and the owners, shippers, laborers and consumers are faced at the moment with the settlement of several very important and far-reaching problems, any one of which would require mature deliberation upon the part of all concerned. Since the consumers are not organized and the labor brotherhoods, the railway executives and the security owners are prepared in a concerted way to present their demands and requirements, it behooves the shippers through their various organizations, and through a central organization if possible, to be ready and have a hand in all of these matters as they arise. There are several of them and each one must be settled in the near future if we are to return to anything like normal conditions. There can be no such return as long as the railroad situation remains in its present condition. First of all, with the advent of a new administration and the coming to Washington in a few days of a new Congress, let us take up and consider legislation.

LEGISLATION.—A few days ago, after conference with President Harding, Senator Cummins, who is the big man of the Senate as far as railroad legislation is concerned, announced that he proposed to offer in the new congress a resolution for a congressional investigation of the entire transportation system. Today, when this article is being written, S. Davies Warfield, representing the National Association of Owners of Railroad Securities, announces that he will present immediately a plan for the co-ordination of all railroad activities. Mr. Warfield proposes to present in detail in the near future to the Senate Committee on Interstate Commerce all of the details regarding his plan. The merit or lack of this plan is not known generally at the present time, but the success which Mr. Warfield had in the last congress in getting a section into the Transportation Act which practically required the Interstate Commerce Commission to raise rates to a level that would guarantee a six per cent. return on the value of the property for rate making purposes should put the shipper on his guard instantly, and he should be prepared to analyze Mr. Warfield's plan and be ready to tell the committees of congress and the individual congressman what things in that plan are satisfactory and those which are objectionable. The weakness of the shipper's position in the past has always been his inability to present any workable program and then keep his forces marshalled behind him in full support.

Next to this general investigation and the Warfield plan and numerous other proposals and suggestions which will undoubtedly grow out of Senator Cummins' proposed investigation comes further consideration of Section 15 (a) of the Interstate Commerce Act, which is the one placing the mandate upon the commission to keep rates at a level which will produce a six per cent. return. At various meetings throughout the country since the passage of the Transportation Act shippers have gone on record favoring the repeal of this section, and the increase in rates which followed its enactment, although a very large one and although such a one as has undoubtedly influenced the density of traffic and deprived the carriers of much freight, is not sufficient to bring the earnings up to the level required by the section and desired by the security holders and railway executives.

Then, too, there will be a very strong fight in congress over the question which has just been argued in the Supreme Court of the United States that of the Interstate Commerce commission's jurisdiction over intrastate rates. Following the refusal of various state and public utility commissions to allow the increased rates required by the commission to go into effect on intrastate traffic there have been and are pending various proceedings instituted by the commission for the purpose of deciding whether the increased rates or some other rates should be applied on intrastate traffic. Many of these proceedings have been decided by the commission, and the finding has almost always been that a lower level of intrastate rates is discriminatory and prejudicial to interstate commerce and unduly preferential in favor of intrastate shippers. These findings have been followed by orders of the commission requiring the carriers to bring the intrastate rates up to the interstate level, and these orders, in turn, have been taken into court either by the carriers or the state authorities. Only recently arguments have been made before the Supreme Court of the United States as to the authority of the commission in these matters, and a decision will undoubtedly be handed down within the next few weeks settling this controversy as far as the courts are concerned. If that decision upholds the authority of the Interstate Commerce Commission, congress will be beseiged from many quarters immediately to amend the law. It is quite possible that the shippers will find themselves on both sides of this controversy, but they should at least get together and try to agree on some policy leaving the present law as it stands or amending it if they think it should be amended. These are the main problems which must be decided in congress, although there are several minor ones which will follow in due course and will be treated in their turn. Leaving legislation and going to the next problem we find ourselves before the

RAILROAD LABOR BOARD.—This organization has been considering for some weeks past the various differences existing between the railway managers and the brotherhoods. There is probably nothing of more importance to this country today, from a domestic standpoint, than some scheme or plan whereby the railway executives and the railway brotherhoods can get together and work for the good of the transportation systems of the country instead of continually quarreling, bickering for advantage and keeping the shippers and the public stirred up with talk of strikes and dissensions of all kinds. There can be no peace in the railroad world until these two factions are brought together under a plan whereby they can cooperate, and if such a plan cannot be found, then by laws which will require them to obey the mandates of some body which is acting in the interests of the public. The man in the street has in the past few months paid out through freight and passenger rates and through taxes millions of dollars for the purpose of keeping our transportation system in operation and ready for some kind of service, and the time has come when he is entitled to get that service on a reasonable basis of rates and with the knowledge that his goods or his family will be transported to their destination without fear of what amounts to a mild civil war because of the inability or refusal, whichever it may be, of the railway managers and the railway employes to live quietly in the same house together. The public does not ask and would not even suggest that they lie in the same bed together, but they can at least take turns in using that bed and each one refrain from beating a drum while the other one is trying to sleep. The National Industrial Traffic League, which represents a larger number of shippers of various commodities than any other organization, has already filed a petition with the Railroad Labor Board and intervened in this controversy, and will attempt to show that board the shipper's attitude and interests in these labor troubles. It takes ninety cents out of every dollar to operate a railroad and a very large portion of that ninety cents to pay labor. There is something wrong, and until that wrong can be righted we will get very little efficiency from our railroads and we will continue to pay, as we have been paying for several months.

INCREASED RATES.—A great deal is being said and has been said and will continue to be said regarding the highest scale of rates which this country has ever known. Most everyone seems agreed that the only reason for these rates is the necessity of allowing the carriers to earn a fair return upon their rate-making value as fixed by the commission in its recent decision regarding increased rates. Just how far these rates have helped the carriers is considerably much of a question. Well informed men all over the country state that various mills are closed and that various commodities are no longer being transported because the rates are so excessive that numerous articles and commodities cannot be shipped with any profit. Just how far this thing goes cannot be estimated. When a mill closes and men are thrown out of work it is rather difficult to say just how much damage is done to the country, but when many mills are closed and many men are thrown out of work the damage to the country not only cannot be estimated, but it cannot be repaired in many subsequent years. Surely the shipper does not propose to continue the present scale of rates if he can help it, and there is just one of two things which must be done. Either the operating expenses of the carriers must be lowered by increased efficiency or the carriers must be satisfied to operate their roads on much less than the much talked of six per cent. return. A few years ago when it was suggested from time to time that freight rates were made on what the traffic would bear the commission was besieged from all sources with protests as to any such basis, but today we are confronted with a mandate upon the Interstate Commerce Commission to make rates which, when made, are more than the traffic can bear, and if the ordinary everyday individual in this country, together with a sufficient number of his fellows, ever realizes just what an increase in freight rates means before it is finally paid by him, then the country will hear a wail which will make the threats of bankruptcy of the carriers and the threats of strike by the brotherhoods seem but a weak voice.

EARNINGS for the month of December, 1920, show that the net railway operating income of the carriers was $17,037,000, which produces an annual return of 1.17 per cent. on the value of the properties as tentatively fixed by the commission for rate-making purposes, and which is 80 per cent. below the amount estimated as probable under the increased rates. Thirty-four per cent. of the carriers concerned in these figures failed to earn their operating expenses, leaving 114 carriers which enjoyed a net operating income. In November there were 64 carriers that failed to earn their expenses. During December the operating revenues exceeded those for the same month in 1919 by 21½ per cent., but the operating expenses kept pace and showed an increase of 20 1/5 per cent. leaving an increase of 24.1 per cent. in the net railway operating income. Taking the figures for the four months beginning September 1, when the carriers became responsible financially for their properties, and coming through the month of December, we find that the annual rate of return was 3 2/5 per cent. or, translated into dollars, that the carriers failed by $174,668,000 to realize the amount of net operating income that they expected to get under the increased rates. This situation is not local but applies in every district of the country, being highest in the eastern district and lowest in the southern.

OPERATING STATISTICS.—Early in 1920 the carriers set a goal for efficiency and labored to the end that they might load each freight car with 30 tons of freight and move it at least 30 miles per day. Figures for the year now show that the average load per loaded freight car was 29 2/5 tons, an increase of 1 2/5 tons over the average for the previous year and 3/10 of a ton more than during 1918. The daily movement of freight cars in 1920 averaged 24.9 miles, which was nearly 2 miles a day higher than that made in 1919. For December, 1920, the average load was 31 1/5 tons, the highest average shown by the records, and this average was made in the face of a large decline in freight tonnage. The average movement of freight cars during this month was 24 4/5 miles per day. The expense for fuel for freight trains averaged 63 4/5 cents per train mile, compared with 49 3/5 cents during the previous year, and the cost of coal used in transportation service averaged $4.20 per net ton, an increase of 88 cents over 1919.

LABOR COSTS GREATER THAN FREIGHT INCREASES

SOME INTERESTING INSTANCES are given by the carriers showing how the labor cost of transportation has increased as compared with the increase in rates. In 1917 the freight rate on 100 pounds of dry goods from Lowell, Massachusetts, to Seattle, Washington, was $1, and at the present time the labor cost alone on such a shipment is $1.04. On shoes from Boston to Philadelphia the rate in 1917, per 100 pounds, was 37 cents, and the labor cost today on this shipment is 37 cents. On typewriters from Hartford, Connecticut, to Cleveland, Ohio, the rate per 100 pounds in 1917 was 55.9 cents, compared with the labor cost today on the same shipment of 56 cents. On lumber from points in Georgia to Norfolk the rate per 100 pounds in 1917 was 20 cents, and the present cost of labor in this shipment is 15 cents, or 3.5 cents more than the increase in the freight charge, which at the present time is 31.5 cents. These figures are taken from statements issued by the Association of Railway Executives, which claims that these instances are all representative and that in each instance the increased labor cost equals or exceeds the increase in the freight rate.

The Interstate Commerce Commission has recently released statistics which the Bureau of Railway Economics has used in estimating that the pay roll of the railroads for 1920 was approximately $3,610,000,000, an increase of $1,870,517,858 over the figure for 1917, the last year before government control of the railroads, during which year the pay roll was only $1,739,482,142, or less than half of the figure for 1920. These figures do not include last year's wage award, which was retroactive to May 1 and there will be a substantial addition because of this award. Taking into consideration this award, as well as the decrease in the number of employes, the railroads estimate that their pay roll in 1921 will represent an increase over 1917 of $2,078,517,858.

ASSISTANT OIL SHALE ENGINEERS WANTED BY MINES BUREAU

THE CIVIL SERVICE Commission announces an open competitive examination for oil shale engineer, successful applicants to be appointed to vacancies in the Bureau of Mines, for duty in Washington or in the field, at $1,800 to $2,400 a year, and in positions requiring similar qualifications, at these or higher or lower salaries. Applicants must have graduated with a degree from an institution of recognized standing, with major work in mining or mechanical engineering, and preferably petroleum and oil shale engineering, or possess training equivalent to such education. "Four years progressive experience in technical work in mining or mechanical engineering, together with evidence of the possession of a knowledge of the fundamentals of the science involved," will be construed as training equivalent to a technical education.

PENNSYLVANIA MINE LAWS PUBLISHED

JUDGE J. W. Thompson, law examiner for the Bureau of Mines, is the author of Bulletin 185, just issued by the bureau, and entitled "Pennsylvania Mining Statutes Annotated."

Every law passed by the state of Pennsylvania relating to mining subjects from 1785 to 1920, whether obsolete, repealed or still in force, is discussed in the bulletin.

Judge Thompson has classified the various laws according to subject matter. All legislation pertaining to fire losses, for instance, is found in one place, and the same may be said of legislation respecting inspection districts, mine foremen, examining boards and mining operations. Each law is illuminated by abstracts of legal construction, and Judge Thompson has made these abstracts intelligent to the laymen by eliminating from them all legal phraseology.

The bulletin contains 1221 pages and is the only publication giving all the mining statutes of Pennsylvania complete and accompanied by court holdings. Copies have not been printed for free distribution, but may be purchased from the Government Printing Office.

GRAPHITE INDUSTRY IN 1920

Sales of domestic and amorphous graphite by producers in the United States in 1920 amounted to 9,510 short tons, a 28 per cent. increase over those of 1919, but the value of sales was only $626,201, a considerable reduction from $777,857 in 1919.

Colorado, Nevada and Rhode Island operators reported to the Geological Survey sales totaling 4,694 short tons at an average price of $10.60, which was $3.52 less than the 1919 price.

Crystalline graphite sales amounted to 9,632,360 pounds, valued at $576,443, as compared with 8,086,191 pounds valued at $734,141 in 1919. The average pound price was 5.9 cents, as against 9 cents in 1919.

Alabama led all other states in the production of crystalline graphite, 1920 sales amounting to 4,894,648 pounds, or 51 percent. of the total sales in the entire country. New York and Pennsylvania sales amounted to 3,552,687 pounds, or 37 percent. of the national total. The remaining 13 percent. is credited to California, Montana and Texas.

Total production of amorphous and crystalline for six years follows:

Domestic Graphite sold in 1915-1920

Year	Total: Quantity (Short tons)	Total: Value
1915	4,718	$ 429,631
1916	8,088	935,471
1917	13,593	1,167,879
1918	12,991	1,524,254
1919	7,422	778,857
1920	9,510	626,201

Importations for 1920 follow:

Graphite Imported into the United States in 1920

Country of origin	Quantity (Short tons)	Value
Ceylon	9,204	$1,077,290
Madagascar	4,710	286,383
Canada	2,170	157,015
Brazil	....	....
Mexico	3,659	131,832
Chosen (Korea)	810	29,936
Italy	137	5,072
Austria	58	1,195
Germany	30	2,502
Other countries	317	20,087
	21,095	$1,711,312

MAGNESITE IN 1919

REVISED FIGURES issued by the Geological Survey show that the quantity of magnesite produced and sold or treated in 1919 was 156,226 short tons, or about thirty-two percent less than 1918. Sales realizations totaled $1,248,415. The Survey's tabulation of crude magnesite produced and sold or treated in the United States from 1914 to 1919 follows:

Year	*Quantity (short tons)*	*Value*
1914	11,293	$124,223
1915	30,499	274,491
1916	154,974	1,393,693
1917	316,838	2,899,818
1918	231,605	1,812,601
1919	156,226	1,248,415

TAX UNIT ENGINEER RETURNS TO SAN FRANCISCO

FREDERICK B. HYDER, valuation engineer in the Subdivision of Natural Resources, Internal Revenue Bureau, who has been assistant to Orr Hamilton, chief of the metals section, has resigned and returned to San Francisco to resume the practice of his profession, that of mining and metallurgical engineering.

SAND-LIME BRICK IN 1919

PRODUCTION AND PRICES of sand-lime brick in 1919 were greater than in 1918, according to the report just announced by the Geological Survey. The increase in quantity exceeded forty-nine percent and increase in value exceeded ninety-three percent.

Michigan, as usual, lead all other states, its activities for the year including 29 percent of all production and 30 percent of all sales in the country. Minnesota came second, with 16 percent of the quantity and 14 percent of the value of the country's output. Wisconsin was third, Florida fourth and Indiana fifth.

There was an increa e of 50 percent in quantity and 94 percent in value in marketings of common brick, of which 99 per cent of the country's entire output consisted. The average price per thousand was $11.58, as compared with $8.94 in 1918 and $7.54 in 1917. The average price of face brick, of which only 1,670,000 were sold during the year, was $13.29, as compared with $11.35 in 1918 and $9.36 in 1917.

Sales of sand-lime brick for nine years were as follows:

Sand-Lime Brick, 1910-1919

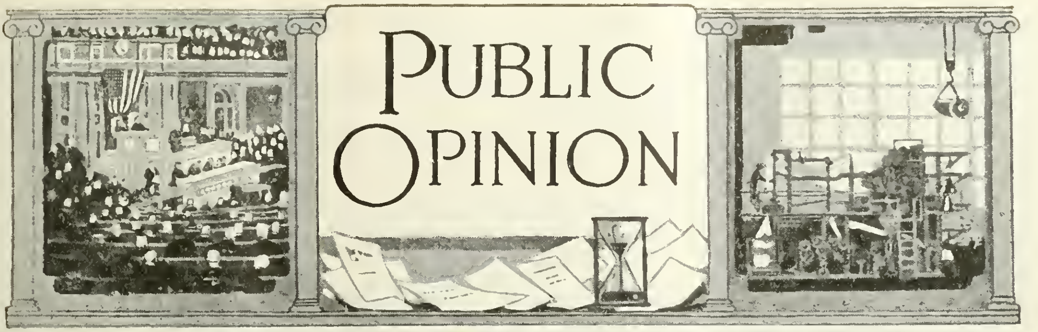
Year	*Number of operators reporting sales*	*Quantity (thousands).*	*Value*
1910	76	172,507	$1,169,153
1911	66	142,963	897,664
1912	71	178,541	1,200,223
1913	68	189,659	1,238,325
1914	62	172,629	1,058,512
1915	56	179,643	1,135,104
1916	53	227,344	1,474,073
1917	47	187,546	1,420,330
1918	42	98,399	883,929
1919	35	146,947	1,705,163

MINE EXPERIMENT STATIONS TO BE INSPECTED

STARTING ON APRIL 11. H. Foster Bain, acting director of the Bureau of Mines, and Dorsey A. Lyon, supervisor of experiment stations, will go on a trip of inspection. They will go first to Pittsburgh and then to Chicago, Houghton, Mich., Minneapolis, Kansas City, Bartlesville, Oklahoma, Rolla, Mo., St. Louis, Birmingham, Tuscaloosa and Atlanta, in the order named. At Rolla Dr. Bain will deliver the commencement address on April 29 before the Missouri School of Mines.

ALUMINUM IN 1920

PRIMARY ALUMINUM to the value of $41,375,000 was produced in the United States in 1920 as compared with $38,558,000 in 1919. The increase was approximately 7 percent. Market prices ranged between 32 and 33 cents a pound during the year. The Geological Survey in announcing production figures predicts that 1921 will be a prosperous year for the aluminum industry.



SENATORS DISCUSS MULTIPLICATION OF GOVERNMENT AGENCIES

THE GROWING TENDENCY of parentalism in government has met with most persistent opposition not only by the public at large but in many instances from Congress itself. REPRESENTATIVE CAMPBELL, in an address on Washington's birthday on the floor of the House, said:

"Governments do not spring up; they are created. They do not endure; they may be perpetuated. An independent and free people may be original, make and follow their own plans, and determine their own destiny. This hour is full of interest to those who are concerned with questions affecting the welfare of the people and the future of the republic. The government created was of the people, by the people, and for the people. Its purpose and powers are simple, plain, and direct. It offers protection to the citizen in his right to life, liberty, property, and in the pursuit of his happiness. These powers impose upon the government created the duty of dealing with national and international questions affecting the life, the character, and the honor of the republic and its people in their national and international relations. The right and duty of dealing with such questions as affect the individual citizen are left to the states and the smaller political subdivisions. Under the simple guarantees of government that make the individual secure in his natural rights the American citizen has been developed. He is self-reliant, resourceful, courageous, inventive, ambitious, patriotic, and appreciative of his heritage of freedom.

"This leads me to call attention to the important duties of this hour that require us to take our bearing and to ascertain how far we have already been beguiled to depart from the guarantees of the constitution and divert and multiply the activities of the government in matters foreign to its original purposes

"It would be difficult to enumerate all the departments, bureaus, and commissions of the government at Washington that have been created to exercise bureaucratic authority and paternal guardianship over the people in every part of the republic. Over 690,000 civilian employes make up the army that oversees and directs the affairs of the people and assumes guardianship over them. Government reports on every subject from adenoids to rat traps fill the files of offices that cover acres of floor space in Washington, the mahogany and quarter-sawed oak office furniture already installed has cost many millions of dollars, and more is being constantly purchased. If a yearling dies of blackleg on a farm in Kansas, the government at Washington acts on the case. If a weevil bores through a boll of cotton on a plantation in Texas, the government at Washington is stirred to action. Nothing escapes the vigilant eye of the government and its innumerable functionaries. If the price of one article goes up, let the government take charge of the seller; if the price of another goes down, let the government take charge of the buyer. Government control is the remedy for every ill, and government regulation the source of every good.

"The fathers did not contemplate at any time under the constitution they gave us a government by men. It was not in the scheme of the fathers that at any time the people should be beguiled into using the government at Washington for supervising or directing their purely personal, local, and domestic affairs. It is fundamental that a free people may not be expected long to endure the annoyances, the vexations, the arbitrary regulations, the restrictions, or the disappointments that are incident to government by men acting as the functionaries of a central authority, directing the affairs of and exercising police powers over the people in the remotest parts of their territorial limits. Even the assurances of government bureaus that the authority exercised over the liberty of the citizen is for his own good will not long beguile the citizen into a surrender of his right to live under a government of laws enacted by his authority and consent.

"We have already been led by the delusion that government bureaus, exercising bureaucratic authority, not authorized by the terms of the constitution, are better for the people than a government of plain statutes. We have been lured by the promise that government agents would lead the citizen by the hand into green pastures, beside still waters, into Elysian fields, then on into the millennium. Already the citizen looks about him and finds himself in the midst of a fool's paradise, entirely surrounded by government bureaus. So many of the numerous bureaus of the government are exercising bureaucratic authority that they meet the citizen everywhere he turns—in his fields, in his mills, in his mines, in his shops, in his factories, in his places of business, great and small—everywhere substituting the will and judgment of a government agent for the will and judgment of the individual citizen.

"Governments that depend upon the confidence and affection of the whole people for their perpetuation should use great care in giving rise to hopes of benefits that governments can not give."

THE PROPOSAL for the creation of a department of education made to the Sixty-sixth Congress, which brought such a storm of protest from numerous sections, was very ably defended by SENATOR HOKE SMITH of Georgia, who gave some startling figures on illiteracy. In part he says:

"The bill provides first for the creation of a department of education, for the removal of illiteracy, for the Americanization of immigrants, the introduction of hygiene and health in the schools, etc.

"The census of 1910 shows that the white illiteracy had increased in the United States during the thirty years prior to that time. There were 5,000,000 foreign-born residents in the United States who could not read and write English. There were 2,000,000 who could not read or write any language. There were 3,500,000 who could not speak or write English.

"The financial loss estimated by men well-informed as a result of illiteracy alone is \$825,000,000 annually. The director of mines and mining recently showed that out of a million men employed in the mines, 620,000 were foreigners, and 460,000 could not speak English. He attributed 1,000 deaths and 150,000 injuries in the mines annually to illiteracy. One-half of the industrial accidents that occur annually are attributed to illiteracy. The first draft in the recent war disclosed the startling fact that one-fourth of the boys called to the colors were illiterates.

"Between 25 and 30 per cent. were physically defective, and it is insisted that 90 per cent. of the defects could have been removed by intelligent training as to hygiene and simple diseases during childhood. Of the total draft, 700,000 were illiterates. With our boys called to the colors, the ages being from just below 20 to just above 30, out of 4,000,000, 700,000 were illiterates.

"These facts are startling and should shock our national conscience. Let us turn to the present condition of the teaching body of the United States. The average pay of teachers does not exceed \$650 a year. One hundred thousand are less than 20 years of age; 30,000 have only a grammar-school education; 200,000 have less than a high-school education. Five million of children are today either out of school for lack of school facilities or are being taught by teachers who ought to go to school."

PRICE REGULATION and government interference with capital as it is employed in industry is a subject of ever increasing discussion. PROFESSOR JAMES MAVOR, in a recent issue of the *Boston News Bureau* says:

"Interferences with prices, with supply and consumption of commodities, with movements of capital, with reserves of private economy, and with wages have not only disturbed the smooth working of the system by means of which through spontaneous action of innumerable groups the needs of mankind were satisfied, but have bred a reliance upon governmental action which has burdened the governments of all countries with obligations that with the best intentions in the world they could not find administrative agency adequate to implement.

"As it is, the immense increase in governmental functions, has thrown upon the taxpayers the maintenance of vast armies of functionaries imperfectly trained and imperfectly supervised, a condition which has not only intensified bureaucratic control but has also resulted in highly uneconomical rendering of services previously rendered voluntarily and in case of failure at the risk of individuals or of mutually associated groups."

PERHAPS no president of the United States ever sounded a more welcome note than did PRESIDENT HARDING when he said: "More business in government; less government in business." The *American Metal Market*, in commenting upon this statement, said:

"Those who have given study to the subject realize the hard task that faces Congress and the administration in giving business the assistance it needs and at the same time pursuing a policy that calls for as little interference as possible with normal business procedure. Among these responsibilities is the question of tariff, which, due to a free trade movement among large manufacturers and exporters, it is conceded that a tariff bill higher than the present Underwood tariff, yet not so high as generally wished by old line protectionists, is the only measure which will endure."

WITH OPTIMISM as the keynote, H. B. THAYER, president of the American Telephone and Telegraph Company, states his views concerning the length of the present so-called "business depression."

"It did not require a prophet but only a man of broad vision to see that the country would have to go through the kind of readjustment which has taken place. To my mind, the present industrial and financial condition can be best compared to that part of a severe illness just following the crisis. We can feel that the worst is over and the patient is going to recover. His strong constitution is going to pull him through. How fast recovery will be will depend upon the treatment. If the doctor is to follow the old-fashioned methods and bleed the patient, recovery will be pretty slow. If, on the other hand, the patient's system is to be built up with tonics and nourishment, it will be rapid and more permanent. The great problem of the whole world is to increase wealth to make up for the war period and to enable the countries of the earth to pay their debts. To the extent that taxation interferes with production it interferes with its own objects. If we can look forward to a period of wise and helpful legislation, I believe that we can look forward to a rapid return to normal conditions."

NEW LAWS OF INTEREST TO MINING INDUSTRY

IMPORTANT BILLS ENACTED into law by the Sixty-sixth Congress included the following:

Authorizing the cutting of timber for mining purposes by corporations organized in one State and conducting business in another State.

Postponing from December 31 to July 1 performance of assessment work on 1920 mining claims. (Bills to change the mining assessment period so that it will expire July 1 instead of December 31 failed.)

Authorizing mining under lease of magnesite, gypsum, limestone and asbestos on Indian reservations in Arizona, California, Idaho, Montana, Nevada, New Mexico, Oregon, Washington and Wyoming.

Authorizing mining under lease of zinc on Quapaw Indian lands in Kansas.

Sale of coal and asphalt deposits on the Choctaw and Chicksaw Indian lands of Oklahoma.

Four year coal prospecting permits in Alaska.

Repeal of the Lever Food and Fuel Control Law.

Investigation through the President of petroleum resources and production in foreign countries.

Extension of Osage, Oklahoma, mineral trust period to 1916.

Forbidding water power development in national parks.

Abolition of the Council of National Defense.

War finance Corporation revived.

Joint Committee of the House and Senate authorized to investigate and recommend changes in government administration.

SECRETARY OF WAR JOHN W. WEEKS, in an address before the Pittsburgh Chamber of Commerce regarding governmental economy, said:

"The people have been promised economy in government. They believe the government has not been economically managed during the last few years. In bringing about this condition I do not place so much reliance in the reduction of the number of employes, important as that is, as I do in the number of governmental operations pending and the propositions pending to put the government into new operations requiring large expenditures. The only way to economize is to stop spending money.

"If a business concern finds its credit somewhat impaired on account of its large borrowing, and its business more or less in distress for other reasons, the thought of undertaking additional commitments which can be delayed or which are not absolutely imperative would not be considered for a moment. That should be the course followed by the government. Every scheme proposed which requires additional expenditures, worthy though it may be, should be delayed until we have cleared the atmosphere of the difficulties confronting us.

"Within the next thirty months the government must provide something like seventeen billions of dollars to meet its running expenses and refunding operations. This is an infinitely greater task than was ever undertaken by any nation in the world in time of peace, and there can be no one, skilled in financial operations though he may be, who does not view the prospect with more or less alarm. With this situation facing us, it is the height of folly to undertake new commitments if they can be avoided, and I assume that no one will dissent from that proposition."

MUCH IS BEING DEMANDED of the new administration. Perhaps no one question is receiving greater concern than the attitude of the present administration toward big business and its attitude toward a business policy for the government itself. CHARLES P. CRAIG of Duluth, Minnesota, says:

"What is the business policy for Congress?

"To cut down expenses? Yes. To frown upon extravagance? Yes. To scrutinize rigidly every appropriation? Yes.

"Is that all? Would private business succeed if it confined its attention to stopping the leaks? And is not the same policy appropriate in national affairs as in private business? Must there not be a creative side to accompany repression? I am reminded of conditions after the Civil War, when the country was smaller than it is now, poorer than it is now, half of it completely exhausted, its currency discounted 50 per cent., its revenues mortgaged up to the hilt. What did the United States do then? We built the Pacific roads. We went boldly ahead to occupy the West and the debt of the Civil War period was cleared off in an amazingly short time.

"The courageous policy is the right policy now. Let Congress be as economical as it can be, but by all means let measures be taken to create new national resources. There may be many projects before us that are appropriate for this purpose. I am thinking especially of the improvement in the St. Lawrence which will admit ocean-going commerce to the lakes. It will create a new continent as surely as the building of the Pacific roads created a new continent. It can be made self-financing. It will bring into fruitage millions of acres that are now below the economic horizon. It will bring into market parity the production of the Mississippi Valley now handicapped by excessive transportation costs.

"Shall not the country most quickly be rid of the war burdens by adopting the courageous, the creative, the constructive policy? Or must we work ourselves out of debt, by trimming the wages of the stenographers at Washington $5 a month apiece?"

WORLD'S MINES INVOLVED IN WAR SETTLEMENT

A LARGE PROPORTION of the indemnities Germany must pay consists of mines and minerals. Senator Spencer of Missouri recently made a study of the extent to which these credits were made and allowed, showing that indemnity settlements made or to be made included the following: To France, Saar Basin mines, producing 14,000,000 tons yearly; coal deliveries totaling 210,000,000 tons in ten years; 35,000 tons of benzol, 50,000 tons of coal tar and 30,000 tons of ammonia; Alsace-Lorraine, which produces yearly 21,136,265 tons of iron, 3,795,932 tons of coal and 76,672 tons of salt; to Italy: 85,500,000 tons of coal in ten years; to Belgium, 80,000,000 tons of coal; to Japan, forty mines with equipment, including two iron mines, two gold mines and coal mines with an annual output of 814,000 tons.

ALASKAN COAL LEASE MEASURE BECOMES LAW

THE BILL authorizing four-year leases of Alaskan coal lands was signed by President Wilson. It was one of the last measures to receive his approval.

Mining and Petroleum Digest

BREAD LINES EMPHASIZE NEED OF ZINC TARIFF

UNEMPLOYMENT is the gravest problem facing the Tri-State Chapter of the American Mining Congress. With nearly every zinc operation at Picher, Oklahoma, idle because of lack of business traceable directly to the absence of tariff protection, many mine workmen have become unable to support their families. Forgetful of their own troubles, the mine owners, acting through their local Mining Congress Chapter, have turned their efforts toward relieving the needy. A pathetic description of the situation is given by the Miami (Oklahoma) *Herald:*

"The Miners Relief Committees will meet at the Tri-State club house at 10 o'clock Friday morning to consider means to assist the unemployed miners. Geo. W. Cotter, of the Picher Company mines, will present an employment proposal, it is understood.

"Last Friday a committee of unemployed miners explained their situation before the American Mining Congress meeting and as relief was needed at once, the mine operators appointed a relief committee and began the collection of an assessment of $25 from each operating company.

"The Associated Charities and other charitable organizations have been able to handle the situation until this week when the men made it known that they were on their last resources. 'The men do not want charity, they want work,' according to E. M. Leonard, secretary of the miners committee. F. C. Wallower, chairman of the mine operators' committee on relief, stated before the American Zinc Institute meeting Wednesday noon that there was no time for argument, that immediate action was necessary for the wives and children of the miners were threatened by starvation.

"Several relief plans are under consideration, among which are the establishment of a commissary, the employment of men on road work and a proposal to serve meals to the needy at the Tri-State club house.

"Wallower's address touched the hearts of the local captains of the mining industry and strengthened the bonds of brotherhood between the employer and employe.

"The Rev. Westley Post told of one miner who applied at a Pitcher company mine for work and his plea impressed the ground boss to the extent that he was given work, although the mine did not need the services. When dinner time came the miner went to the "dog house" without his dinner pail and, as is the custom among the miners, he was offered something from each of the buckets until a bountiful dinner was before him. The miner did not eat, and others began to question him and he said that he left his family that morning, knowing that they had nothing to eat for 36 hours and he vowed he would not touch food until he could appease the hunger of his loved ones. The miners immediately made up a collection and the miner was sent to his home to eat with his family. Others tell of how newly employed miners fall from exhaustion, due to a weakened condition caused by hunger.

"Money is being raised, but the plans for relief are not completed.

"E. H. Bartlett, president of the Pitcher Associated Charities, reported that the crisis will be too much for the charitable organizations to handle next week and representatives of the organizations will attend the meeting Friday morning.

"The relief committee from the American Mining Congress consists of the following: F. C. Wallower, chairman; John Newton, Jack Williams, 'Mike' Evans and A. M. Gaines. A committee on relief has been appointed to represent the wholesale interests, as follows: W. H. Trapp, Charles Wells, T. L. Greever, Watt Lyon and M. W. Latimer. The miners have a committee of five, headed by A. W. McDonald, chairman, and E. M. Leonard, secretary.

"The unemployed miners have been notified that if they can find positions elsewhere, it might be advisable for them to go, as the local industry cannot find work for more miners and fears the present situation might last for several months."

NEW MINERALS SEPARATION SUITS FILED

UTAH, CHINO, Ray and Arizona copper have been made defendants, along with others, in suits instituted by Minerals Separation North American Corporation. The following account is taken from the *Wall Street Journal*:

"Minerals Separation, Ltd., and Minerals Separation North American Corporation have filed suits in the Federal Courts against Utah Copper Co., Chino Copper Co., Ray Consolidated Copper Co., Ray Hercules Copper Co. and Arizona Hercules Copper Co. alleging infringement of their basic froth flotation patent and their later issued soluble frothing agent patent, and asking for injunctions restraining these companies from further use of froth flotation with either greater or less that 1% of oil or other soluble or insoluble frothing agents. They also sue for all profits made during the last six years above those that would have been derived had water concentration been used, together with punitive damages for the alleged infringements.

"Suit has been filed by Minerals Separation against James M. Callow and the General Engineering Co., Inc., as contributory infringer, through supplying these mining companies with flotation machines. In this suit Minerals Separation asks that defendants be stopped from supplying pneumatic machines to mining companies.

"The Utah Copper suit is brought in the United States District Court for New Jersey, the Chino, Ray, and Ray Hercules suits in the Federal court for Maine, the Arizona Hercules suit in the Arizona Federal district, and the Callow suit in the Utah district.

"These suits are all brought in equity under patents No. 835,120 and No. 962,678. The first of these, taken out in 1903 and expiring in 1923, is the basic froth flotation patent twice sustained by the United States Supreme Court. The second patent, issued in 1910 and running until 1927, covers the use of soluble frothing agents either with or without insoluble frothing agents. Minerals Separation alleges that it is impossible to use froth flotation with greater than 1% oil without infringing patent 962,678 through use of a soluble oil or other soluble frothing agent to counteract the excess of insoluble agent, and that therefore these two patents cover all forms and variations of the froth flotation process. The soluble frothing agent patent has been sustained by the Third U. S. District Court of Appeals at Philadelphia, but has not as yet been brought under review by the Supreme Court.

"Minerals Separation attorneys say that their clients expect to recover many millions of dollars due them from the mining companies because of these infringements, and believe that the suits in question will mark the final fight made in this country to evade the alleged basic patents of their clients. Minerals Separation, Ltd., is party only through being owner of the patents in suit, American rights to which have been assigned to the American Corporation, which will therefore derive all benefits.

"Suits are still pending in the Federal District Court for Maine against Nevada Consolidated Copper Co. and Magma Copper Co. for infringement of these same patents, while hearings are still going on before the master in the suit against Miami Copper Co. Final adjudication of the amount of the damage due Minerals Separation from Butte & Superior Mining Co. is held up pending filing of data showing profits made by Butte while treating ores by water concentration prior to adoption of froth flotation."

MINING CONGRESS DIRECTOR AGAIN RECOGNIZED

"ONE OF THE FOREMOST metallurgists of the day," is the characterization applied by the *Mining & Engineering Record*, of Vancouver, B. C., to E. P. Mathewson, of New York, who at the Denver convention was made a director of the American Mining Congress. The article in the Canadian publication, entitled "E. P. Mathewson, M. E.," reads:

"E. P. Mathewson, who was recently appointed Consulting Metallurgist to the Granby Consolidated Mining, Smelting and Power Co. Ltd., is one of the foremost metallurgists of the day. He graduated from McGill University in 1885 in Mining Engineering and in the following year was appointed Assayer to the Pueblo Smelting and Refining Company of Colorado. He was with that company eleven years, during which time he was respectively promoted to the positions of Metallurgist and Superintendent. In 1897 he entered the service of M. Guggenheim & Sons, as Metallurgist and Manager of reduction works, handling the problems of treatment of lead and silver ores from mines in the United States, Mexico and Chile.

"In 1892 Mr. Mathewson joined the staff of the Anaconda Copper Mining Company at Anaconda, and remained with that company till 1916, being most of the time employed as manager of the company's Washoe Reduction Works, devoted to copper smelting. It was in this capacity that he worked out the principle of the reverberatory furnace as applied to copper ores, and now practically all oil flotation concentrates are treated in this type of furnace.

"During the war, in October, 1916, he was appointed General Manager of the British

American Nickel Corporation, Ltd., with headquarters in Toronto, and left that company to accept another important position in the United States. His appointment as Consulting Metallurgist to the Granby Consolidated Mining, Smelting and Power Company, Ltd., is a guarantee that the company's smelter at Anyox will be operated along the best metallurgical lines adapted to the refractory ores of the Hidden Creek Mine."

CALUMET-HECLA MAY DO ITS OWN MANUFACTURING

IT IS MORE PROFITABLE to manufacture copper than it is to mine it. This being the case, the general manager of the Calumet & Hecla Mining Company says that this corporation, in the face of the continuance of existing market conditions, may be compelled to manufacture its own metal output. The Duluth *News Tribune* carries the following account of his appearance before the business men of Calumet, Mich:

"That the Calumet & Hecla Mining Company eventually will be forced to manufacture its own copper product was predicted by General Manager James MacNaughton in an address to Calumet business men. There is no immediate prospect of entering upon this venture, but according to Mr. MacNaughton there is no question the time will arrive when it will be the logical proceeding.

"In this connection it was brought out that the manufacture by Calumet & Hecla of its own copper would not be profitable unless it was able to handle its entire output, hereby avoiding possible discrimination against Calumet & Hecla metal. It is Mr. MacNaughton's opinion that the manufacturing project would permit of the operation of the mines on a more profitable basis.

"Mr. MacNaughton emphasized the fact that the manufacturers of copper products are making more profit than those who mine the metal. 'They take no risk,' he asserted, 'and can conduct their business as long as they see fit, purchasing metal from the market. Their business is assured as long as they can buy copper, but a mine is continually exhausting its capital, which is its metal underground.'

"Mr. MacNaughton said that the production of copper ranges from 30 to 60 per cent. of the output as compared with normal times. The amount of copper above ground, in storage, at smelters and in processes of manufacture, he gave as 1,200,000,000 pounds. The Calumet & Hecla alone has a surplus of 75,000,000 pounds. The average mine, he said, is not making a profit, and in fact is not even making enough to pay for depreciation. There will be no betterment of this condition, he declared, until Europe can afford to buy copper as well as other commodities."

CANADIAN BUSINESS MEN WOULD AID GOLD PRODUCERS

BRITISH COLUMBIA interests recognize the necessity of stimulating gold production. The Vancouver Board of Trade recently adopted resolutions directing the attention of the Dominion government to the situation, as shown in the *Daily Mining and Financial Record*, Denver:

"Encouragement to the gold mining industry, especially to mines of British Columbia, is recommended in a resolution recently passed by the Vancouver Board of Trade and forwarded by that body to the provincial and Dominion governments.

"The resolution suggests removal of taxation on gold mines until conditions are again normal; return to Canada of all gold produced from exported ores and purchase thereof by the mint at Ottawa and Dominion assay office at Vancouver, and that all gold sold by the above-mentioned institutions for industrial purposes be priced to cover the normal cost of production, any surplus revenue to be distributed among the gold mining companies in proportion to their respective production."

LABOR MUST BE RESPONSIBLE

MATTHEW WOLL, vice president of the American Federation of Labor, has announced that the organization will have introduced in the next congress a bill providing for the exemption of labor unions from prosecution under "all anti-combination and so-called conspiracy" laws. He explained that the decision was prompted by the government's action against officials of the United Mine Workers in 1919, and made his announcement shortly after the Supreme Court had delivered its decision respecting labor unions and the Clayton Act. The *Chicago Tribune* vigorously opposes adoption of such a law as Mr. Woll announced would be sought, and stated its opposition in vigorous language. We read:

"The unions want immunity from prosecution for any combination or conspiracy, either under the present laws or future laws. They want the power to shut off the fuel supply of the nation, to stop all transportation, to leave the cities to freeze and starve. They want the power to organize, to combine, to bargain collectively with employers for wages and working conditions. They want the privilege of entering into contracts, and, most important of all, the privilege of breaking such contracts to the probable ruin of the employer involved, without any penalty whatsoever.

"Such are the ends to which the proposed legislation would lead. It would put organized labor above existing law. It would create a ruling class in America. In such circumstances labor leaders could dictate to the nation. We doubt that the nation has sufficient faith in labor leaders as yet to submit to such an arrangement.

"Labor has power. It is right that it should have. But if it extends power it must accept responsibility. That is fundamental. The proposed law tends in exactly the opposite direction.

NEVADA'S MINERAL WEALTH

"THERE ARE EIGHT hundred minerals in the world and to my personal knowledge there are five hundred of them to be found in the state of Nevada," declared Professor Claude Jones, of the mining department of the University of Nevada, in an address reported in the *American Mine Reporter*, San Francisco. In many instances, these minerals are not of sufficient quantity to justify production, and in others they can be worked advantageously only under abnormal conditions such as prevailed during the world war. The report of the address continues:

"In speaking of the more precious metals Professor Jones said that from the figures on hand it looked as though Nevada had passed the peak of production of gold, silver, copper, zinc and lead, and that the production had been declining for many years. It is possible that a bonanza is yet to be discovered, he added, but that the chances of a rich strike near the surface are nil. 'If we are to remain among the leaders we must turn to the less common minerals.'

"There are several large deposits of iron ore in Nevada that are practically equal in quality to that found in any section of the country, but the lack of fuel will for some time to come prohibit its use in manufacturing, 'but some day it will be developed,' he added.

"There are large quarries of marble in the State also, but in most cases the distance from the railroad is so great that producers cannot compete with eastern quarries. According to investigations which he has carried on it costs approximately 50 cents a ton mile to transport any mineral to a railroad.

"There are also a number of coal beds in this State, the speaker said, but the quality of the coal is such that it cannot be used for domestic purposes. However, it is possible that it can be used in special furnaces for municipal purposes, by pulverizing and blowing it into the fire.

"The only known occurrence of platinum in a vein is found in Nevada. There are at present two places where this precious metal is found, one is west of Goodsprings and the other is near Bunkerville in the southeastern part of the State."

STRICTER LAWS GOVERNING USE OF EXPLOSIVES NEEDED

BETTER LAWS for the handling of explosives are advocated in a Bureau of Mines Bulletin reviewing the work of war time explosive regulations. Dr. Charles E. Munroe, author of the bulletin remarks that large supplies of explosives have been found within the corporate limit of cities. He says that some of the states have no laws of any kind governing the keeping or handling of explosives and that the United States Government is practically the only one which does not exercise permanent control over their manufacture, storage and use.

About 31,000 mines and quarries of the United States use explosives. Altogether there are approximately 500,000 industrial consumers. During the year 1919, 417,634,470 pounds were manufactured. There are 55,000 wholesale and retail dealers.

During the war, Dr. Munroe shows, 16,000 agents were commissioned by the Bureau of Mines to assist in carrying out the regulations over explosives and one-half million licenses for the manufacture, sale and use of explosives were issued. Nevertheless, there were numerous explosions resulting in millions of dollars of damage and about ninety convictions for violation of federal explosive laws were secured.

MOGOLLON MINING DISTRICT

GEOLOGIC STRUCTURES, types of rocks, ore deposits and descriptions of mines and prospects of the Mogollon mining district of New Mexico are given in the report of H. G. Ferguson of the Geological Survey. Mr. Ferguson recently visited the district.

The Mogollon district is one of the oldest and most productive silver mining regions of New Mexico. During the last 40 years the district has produced metals, chiefly silver, exceeding in value the sum of $15,000,000. The closest railroad station is 85 miles distant.

PHOSPHATE ROCK IN 1919

PHOSPHATE ROCK sales during 1919, the latest year for which Geological Survey figures have been tabulated, were nine percent smaller in quantity and forty-one percent greater in value than those of 1918. The quantity was 2,271,983 long tons and the value was $11,591,268. Total sales realizations would have been greater had not heavy shipments been made on the basis of contracts made several years previously.

Sales from 1910 to 1919 were as follows:

Year	Quantity (long tons)	Value
1910	2,654,988	$10,917,000
1911	3,053,279	11,900,693
1912	2,973,332	11,675,774
1913	3,111,221	11,796,231
1914	2,734,043	9,608,041
1915	1,835,667	5,413,449
1916	1,982,385	5,896,993
1917	2,584,287	7,771,084
1918	2,490,760	8,214,463
1919	2,271,983	11,591,268

A much smaller quantity was mined than was sold during 1919, the difference being nineteen percent, as shown in the following table:

State	1918 Long tons	1919 Long Tons	Percentage of increase or decrease
Florida	1,884,891	1,254,609	—33
South Carolina	33,673	49,032	+46
Tennessee and Kentucky	353,726	530,973	+50
Western States	11,955	16,935	+42
	2,284,245	1,851,549	—19

CO-OPERATIVE MINE SUCCEEDS

SO MANY ATTEMPTS to run a mine on the co-operative basis have failed that the Bureau of Mines considers it worth while to issue a bulletin on one which succeeds, as has been done in the case of the Keely coal mine at Dugger, Indiana.

Serial No. 2217, prepared by J. J. Bourquin, Mining Engineer of the Bureau of Mines, relates all the intricate details of organization and operation. One interesting paragraph of the report shows that even co-operative mines have their labor troubles, even including strikes. When strikes occur at Keely all workers stop as in any other mine, until a settlement of differences between the men who actually dig the coal and their own committees responsible for the business management is effected.

WAR MINERAL COMMISSION CONTINUES WORK

A SCORE OF CASES remain to be acted upon by the War Minerals Relief Commission. It had been expected that the commission would wind up its affairs by the first of March, but it now appears that it will be busy well into April and throughout the month.

NESTLER APPOINTED ASSISTANT TO SECRETARY FALL

CHARLES W. NESTLER, of Ohio, was appointed assistant to the Secretary of the Interior immediately upon Senator Fall's assumption of the office. He will be in charge of the Reclamation Service, Bureau of Mines and Alaskan and Hawaiian affairs.

INDUSTRIAL NOTES

The Stephens-Adamson Manufacturing Company of Aurora, Illinois, has just issued a new catalogue which is ready for distribution on S-A Belt Conveyors, catalogue No. 26. The catalogue contains over 100 pages of invaluable engineering and mechanical information relative to advanced belt conveyor practice. Technical data is submitted in graphical and tabular form, supplemented with concise descriptions of equipment. Within the pages of the catalogue are described and illustrated the latest developments in correct belt conveyor design.

The Automatic Reclosing Circuit Breaker Company of Columbus, Ohio, announces the publication of their new bulletin No. 312, which is ready for distribution. This bulletin covers very completely and in a logical manner the theory of operation and application of the automatic reclosing circuit breaker.

The Nordberg Manufacturing Company of Milwaukee, Wisconsin, has issued bulletin No. 31 on Nordberg Diesel engines. The booklet gives considerable space to the fuel oil situation, the requirements of a Diesel engine, and the principle of the two-cycle engine. It points out the distinct features of the Nordberg engine, describing the different types and parts, and gives information relative to fuel consumption, speed regulation, auxiliary equipment, cooling water and operation at high elevations. Copies of the book may be had by addressing the Milwaukee office.

H. G. James has been elected secretary and general counsel of the Western Petroleum Refiners Association with headquarters at Kansas City, Missouri. Mr. James takes the place of F. W. Lehmann, Jr., who resigned. Several years ago Mr. James was secretary of this organization.

The executive offices of Oglebay, Norton and Company will be located in the Hanna Building, Cleveland, Ohio, after March first. The Montreal Mining Company, the Castile Mining Company, the Bristol Mining Company, the Fortune Lake Mining Company, the Fort Henry Mining Company, the Brule Mining Company and the Commonwealth Iron Company will also be located at this office and the offices of the Range Manager will be continued at Ironwood, Michigan.

The Automatic Reclosing Circuit Breaker Company of Columbus, Ohio, announces the opening of a Birmingham office at 510-512 Brown-Marx Building. B. M. Rogers will have charge of this office, and with his knowledge of and experience with the company's apparatus, the company feels assured that the interests of its customers in his territory will be handled in a capable and satisfactory manner.

PERSONALS

J. E. Burleson of Spruce Pine, North Carolina, spent several days in Washington during the month in interest of a tariff on mica.

Frank J. Schraeder of Jacobsen and Schraeder Mfg. Company at Chicago, was in Washington several days during the month.

James McClary, formerly secretary of the American Iron and Steel Institute, was a caller at the offices of the Mining Congress during the month.

R. C. Allen was in Washington during the early part of March on business pertaining to tax matters relating to the iron ore producers of the Mesabi Range.

L. H. Newman, president of the Northern Ore Mining Company of Minneapolis, Minnesota, spent several days in Washington and New York during March, and while in Washington attended to various taxation matters for his company.

C. W. Potts of Deerwood, Minnesota, is again in Washington after a short trip to New York in the interest of the manganese producers of the Cuyuna Range.

Carl Scholz stopped in Washington en route to his home in Charleston, W. Va., from a trip to New York City, for a conference with officials of the Mining Congress, of which organization he is a director.

Ernest Bamberger of Salt Lake City was a caller at the offices of the Mining Congress on March 2.

H. M. Chance of Philadelphia, Pennsylvania, was a Washington visitor during the month.

J. C. Dick has returned to his home in Salt Lake City after severing his connections with the Internal Revenue Bureau at Washington.

A. Cressy Morrison, Secretary of the National Acetylene Association of New York City, was in Washington on business during the month.

H. B. Johnson of the Huff Electrostatic Separator Company was in Washington on business and a caller at the offices of the MINING CONGRESS JOURNAL on March 21.

E. P. Mathewson, a director of the American Mining Congress, was in Washington for a conference with its officials on March 23.

H. W. Seaman of Chicago, president of the Trojan Mining Company, has been in Washington during the last fortnight attending conferences in connection with gold legislation.

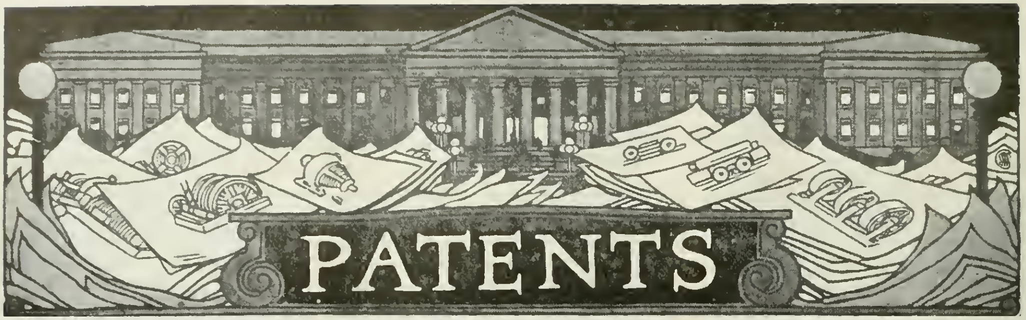
George E. Holmes, noted income tax expert, has been in Washington on business during the month.

John C. Howard, Salt Lake City, after spending several months in New York, Washington and eastern points, has returned to his home.

A. Scott Thompson of Miami, Oklahoma, represented the zinc producers of his district before the Revenue Bureau during the month.

A. P. Ramstedt, controller for the Hercules Mining Company, has been at the Willard Hotel several days during March.

Jerome J. Day has returned to his home in Wallace, Idaho, after an extended eastern trip.



Conducted by John Boyle, Jr.

1,367,271—*G. Kushner*, Avella, Pa., February 1, 1921.

Coal Car comprising a body frame, bearing blocks for supporting the frame, axles journaled in said blocks, track wheels on said axles, a rack bar frame constituting the bottom wall of the car and supported on said body frame, shoulders formed on said block, a raker frame slidably mounted on the shoulders of said bearing blocks, and having teeth extending upwardly between the rack bars, to be reciprocated therein, and operating handles projecting from one end of the raker frame to effect reciprocation of the raker frame.

1,367,332—*R. S. Towne*, New York, and *F. B. Flynn*, Orange, N. J., February 1, 1921. Assigned to Pneumatic Process Flotation Co.

Process and Apparatus for Separating Ore Materials from Each Other.

1,367,609—*N. E. Layne*, Memphis, Tenn., Feb. 8, 1921.

Well Screen and Method of Making the Same, the screen having an external supporting frame which consists in winding a helix of screening wire of a size permitting of insertion of the helix in said frame, and thereafter expanding said helix against the interior wall of the frame.

1,367,777—*H. W. Hardinge*, New York, N. Y., Feb. 8, 1921.

Conical Grinding Mill. When such a mill is operated at its rated capacity the assorting of the material to size is remarkably accurate, but if the material is fed to the mill too fast, as is often done in the effort to increase its output, the fines do not travel toward the outlet as fast as they should, with the result that the coarse particles find themselves embedded in fine material. The latter has a pronounced cushioning effect, which prevents the impacts of the masses, as they are tumbled about, from being fully exerted on the partly crushed pieces, especially in the zones of smaller diameter, where the bodies and masses are smaller and therefore lighter, and have less fall. The net result is that large proportion of coarse particles pass out with the fines.

To obviate this there is provided in the walls of the mill and in particular the cylindrical outlet portions thereof, a series of apertures to permit escape of the fine material.

The apertures are particularly advantageous in the conical outlet portion of the mill, as it is here that the cushioning effect spoken of is most serious and it is also important to have the interior of the conical outlet portion of the mill free, that is devoid of barriers, dams, or other obstacles, so that the masses and pieces can assort themselves freely.

1,368,111—*H. Campbell*, Logan, Utah, Feb. 8, 1921.

Ore Separator comprising a tank, an endless conveyer having receptacles containing mercury and means for driving the conveyer in a direction contrary to the direction of the flow of ore to expose the mercury in the path of travel of the suspended ore.

1,368,153—*C. G. Humphrey*, Wilcoe, W. Virginia, Feb. 8, 1921.

Automatic Coupler for Mine Cars.

1,368,189—*H. Neward*, Coral, Pa., Feb, 8, 1921.

A Coal Digger provided with means for under cutting the shaft head, means for adjustably supporting a boring tool on a truck so that it may be placed in a desired position in the shaft head, means for feeding the tool forwardly to bore a hole in the head and for automatically stopping the same when the hole is completed, and means for moving the tool side wise after completion of the forward movement, and for returning the parts to starting position and means for giving the parts a slow forward movement and a quick return movement.

1,368,456—*W. Robertsan*, Chicago, Ill., Feb. 15, 1921.

Coal Handling Device particularly adapted for supplying locomotives with coal from railroad dump cars. It is a common practice to store coal in large bins in which there is a tendency for the coal to separate from any rock with which it may be mixed. Consequently it is not an uncommon occurrence for an almost entire charge of the rock to be loaded into the tender of a locomotive. By this invention, however, relatively small hoppers are used, preferably adapted to hold the contents of a single car, with the result that any separation which may occur will not be serious in extent. For this purpose hoppers are conveniently built to enable dump cars to be run thereover to be discharged thereinto while beneath the hopper a small dump car is positioned which may be filled with a charge of coal and then elevated on an inclined track by fluid pressure means, into a position to discharge the coal into the tender of a locomotive.

1,368,538—*M. Belcher*, Goose Creek, Texas, Feb. 15, 1921.

Boring Tube for Oil Wells comprising a stock having a channel there through with ports for the discharge of water, said stock having a recess in its end, a bit having a head seated in the recess and anchored therein, said stock having vertically disposed grooves in its edges, reamers slidable in the said grooves and means for holding the reamers in engagement with the bit.

Statement of the Ownership, Management, Circulation, etc., Required by the Act of Congress of August 24, 1912.

Of The Mining Congress Journal, published monthly at Washington, D. C., for April, 1921.

City of Washington, } ss.:
District of Columbia, }

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared E. Russell Coombes, who, having been duly sworn according to law, deposes and says that she is the business manager of The Mining Congress Journal, and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

Name of Publisher—The American Mining Congress.

Postoffice address—Washington, D. C.

Officers:

W. J. Loring, President, San Francisco, Calif.

Daniel B. Wentz, First Vice-President, Philadelphia, Pa.

E. L. Doheny, Second Vice-President, Los Angeles, Calif.

Thomas T. Brewster, Third Vice-President, St. Louis, Mo.

J. F. Callbreath, Secretary.

Editor—T. R. Moss.

Business Manager—E. Russell Coombes.

2. That the owners are (give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock): The American Mining Congress—a corporation, not for profit. No stockholders.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are (if there are none, so state): None.

E. Russell Coombes,
Business Manager.

Sworn to and subscribed before me this 30th day of March, 1921.

(Seal.) Thomas C. Willis.

(My commission expires February 20, 1922.)

The

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SUPPLY AND DEMAND AND THE GOLD INDUSTRY

IF THE GOVERNMENT of the United States had purchased and stored the total production of bituminous coal for a period of thirty years, and had stored this coal at some convenient point, to be turned over to consumers at its cost during the low price era, what chance would the bituminous coal producers of today have to sell coal produced during the present high price level?

Assuming that our annual consumption of coal is approximately five hundred million tons, thirty years production would amount to fifteen billion tons of coal. How many coal mines would remain in operation with a labor cost of $2 35 per ton if this great storehouse of government coal was offered at the pre-war price, $1.12 per ton? It is very plain that the coal mines of the country would close and remain closed until this enormous reserve supply had been practically exhausted.

Suppose the government of the United States had purchased and held in reserve at a point convenient to the place of consumption, all of the copper which could be produced during a period of thirty years and should then announce that this copper would be made available to the public at the average price of copper before the war for that thirty-year period of approximately 12 cents per pound. How many copper mines would remain in operation with a necessary production cost of at least 18 cents per pound? Under those conditions, with the government as an active competitor with an enormous supply of cheaply produced copper, would not every copper mine in the country immediately close and remain closed until this great competitor had disposed of the enormous stock in hand?

If President Harding had found, when he became the chief executive officer of the greatest government in the world, that his government had accumulated such enormous stocks of copper and coal that the industrial requirements of the nation could be supplied for a period of thirty years without the production of another pound of either, how would he have applied that doctrine which he has enunciated with such complete approval of all the people of the United States, "more business in government and less government in business?" These questions seem somewhat silly until we apply the same illustration to the present gold situation.

Gold producers are told when they ask government aid to maintain and sustain a healthy gold producing industry that the law of supply and demand will in time bring about the production of as much gold as is required to properly sustain the credits of the world. And yet the government has now in its possession what amounts to a thirty years' production at the highest rate which the country records; and this great supply of gold, three billion dollars worth, is being sold to the jeweler and other industrial users of gold at the price at which it was purchased by the government during the low price eras of the past.

The gold producers of the nation instead of being able to sell their product in a market controlled by an unrestrained operation of the law of supply and demand are forced to meet the competition of the government in the sales of their product to industrial users. The law of supply and demand does not function as it relates to the gold producing industry; first, because the price of gold is fixed by government regulation and, second, because enormous stocks of gold accumulated during a century period are now available to the consumers of gold for individual purposes at pre-war prices. This situation is one which would call for the most bitter protest if it were applied or made operative in connection with the production of coal, copper or any other of the indispensable commodities in the production of which millions of dollars have been invested, and to the production of which an army of men have been trained for the services of various kinds which are required by the industry. This condition would be horrible enough as applied to a commodity needed by the government only for industrial purposes, but when we consider the great necessity to the government of the maintenance of its gold reserve without depleting the reserves upon which its neighbors predicate their industrial prosperity, a condition arises which is fraught with danger.

THE OPEN SHOP IS NOT A CLOSED SHOP

EVERY CONSUMER is willing to advocate the payment of such wages to labor and the earnings of such profit upon capital as will be fair to both, but his active interest is in making available a supply of life's necessities and luxuries at a reasonable price. A reasonable price to the consumer is possible when and only when the three functions of production, transportation and exchange cooperate in the most efficient way. Now as in ancient times the workmen throughout the temple are idle when there are no designs upon the trestle board. Labor may be efficient and be supplied with all modern machinery and yet be inefficient unless these tools of production are intelligently directed. Effective operation is only possible when those to whom directions are given are required to carry them into effect. The closed shop means insubordination in that the workman is frequently bound by certain rules made by his union which take from the employer the right to effectively direct his operations. Under those conditions inefficiency must result, production must slacken, production costs must increase and the consumer be obliged to pay not only the increased cost of production brought about by inefficiency and insubordination, but a profit upon the cost of that inefficiency to each middleman to whom the goods are passed to the final consumer.

A closed shop necessarily means inefficiency. The exceptions to this rule but prove the rule. The unskilled workman does not earn and is not entitled to as much wages as the skilled workman. His wage should be based upon the extent of his skill and efficiency as measured by increased service. Wages are the price paid for service. The best service will only be rendered when a proper recompense is received therefor. The open shop is fair to the workman, is fair to the employer, it best serves the interest of the great body of the American people, and brings to the workman himself the advantage of lower prices in purchasing the necessities of life. An open shop is not a closed shop.

A LOWER WAGE LEVEL

LABOR'S BEST INTEREST in this country lies in its prompt acceptance of wage reductions proportionate to the reduction in commodity values. During the last twelve months commodity values have undergone a remarkable and spectacular transformation. Production costs—particularly labor costs in those industries which have been able to continue operations—have generally remained at former levels.

Without too literal an analogy, high wages maintained in the face of lowering values and lessening demand result in industrial death—the wholesale closing of plants and the consequent loss of employment to thousands of men.

The extraordinary changes in the values of essential commodities are shown by the following comparative prices quoted in the New York market:

	April 16, 1921	April 16, 1920
Foodstuffs:		
Wheat, No. 2 red	$1.545	$3.00
Corn, No. 2 yellow	.795	1.925
Flour, Minn. patent	8.00	15.50
Sugar, granulated	.076	.165
Butter, cream, 92	.455	.76
Eggs, fresh, firsts	.275	.48
Lard, prime	10.45	21.25
Pork, mess	29.00	42.00
Textiles:		
Cotton, mid, upland	12.45	43.25
Printcloths	.045	.167

One more fact. A great basic industry—the production of copper—has ceased to function. During the coming months thousands of employes will be without employment. The resulting misery is painful to consider. The potential loss to a world needing greater production constitutes an economic disaster.

Why have the copper mines and smelters closed? Because copper is selling below cost. The following table indicates the answer:

Statistics showing the decline in value of exports of refined copper from the United States for eight months ending February of each year.

	Quantity (lbs.)	Value
1919	408,413,090	$104,708,863
1920	355,788,841	75,343,975
1921	300,189,947	52,062,230

These figures issued by the U. S. Department of Commerce show that in the eight months ending with February, 1921, 75 percent of the amount of copper exported in 1919 was sold at slightly less than 50 percent of the previous value.

No industry can continue production when the market value is below the production costs.

Labor should recognize the fundamental and unalterable fact that real wages, not money wages, are the index of proper standards of living.

Prompt and immediate acceptance by labor of the principle of wage reductions proportionate to the reduction in commodity values is a primary and indispensable step in the bringing about of an industrial revival and a return to employment. Failure to recognize this fact can only result in greater depression; will jeopardise the position of labor in the eyes of the public, and will result in economic penalties which the laborer will be the first to feel.

DEPRESSION OF COAL INDUSTRY CONTINUES

THE CESSATION of coal production in England as a result of the menacing strike of the coal operatives, together with the continued depression in the bituminous coal fields in this country, are two factors which, if continued, will result in serious consequences.

A year ago coal production was averaging in the United States about forty million tons per month with a heavy demand far in excess of the productive capacity of the mines. Since the beginning of the present year the demand for coal has dropped to a low level. This has been due to a number of circumstances. The mild winter eliminated a large part of the demand for coal for household use, while the industrial depression has resulted in the elimination of large purchases on the part not only of industrial plants but of the railroads and public utilities.

Figures recently published by the Geological Survey furnish the basis of a comparison of the monthly coal production during the first three months of 1919, 1920 and 1921.

Bituminous Coal Production—Monthly

	1919	1920	1921
January	41,487,000	48,689,000	*39,881,000
February	31,566,000	40,181,000	*30,697,000
March	33,719,000	46,832,000	*30,159,000

*Estimated.

If there should be considerable purchases of American coal by foreign buyers during the coming months and if there is an industrial revival in the late summer together with severe weather conditions in the early fall, the situation in regard to coal supply will be serious and almost inevitably will result in a temporary shortage.

One of the basic reasons for the instability in the coal industry—a factor which has been so injurious both to the permanent coal operator and the public—is the failure of the domestic consumer to purchase his coal during the spring and early summer of the year. Such purchases now would give the consumer the advantage of lower price-levels and would be helpful in enabling the operators to continue production. If the conditions indicated should come about, the resulting scarcity of coal and the consequent high prices will not be the fault of the permanent coal operator, who has been doing his utmost in the face of most difficult conditions to maintain the output.

A NEW FACE AT THE DOOR

THE CONSERVATIVE business interests of the country will be greatly gratified at the initial statements made by the new Secretary of Labor, Mr. James J. Davis.

All patriotic citizens will agree that in free America there is no room for autocracy of any kind, whether it be of labor or of capital. The conception of the Labor Department announced a few years ago by the then Assistant Secretary of Labor that "the Department of Labor is the state department of organized labor" created the impression that the Department of Labor felt itself particularly charged with the duty of building up and increasing the strength and the autocratic power of organized labor. With the unpleasant flavor created by this announcement and the almost uniform efforts to make this theory effective still in its mind, the public will be greatly gratified at the statement recently made by Secretary Davis of principles upon which all Americans should thoroughly agree:

"A fair deal for capital, a decent living wage for labor, larger profits for farmers through lower railroad shipping rates, and settlement of all industrial disputes through conferences between employer and employe with the golden rule as the basis of settlement."

This platform includes a statement that

"Labor must realize that any plan of action or policy that proposes to confer privileges and benefits on one group that are not to be extended to all others will inevitably fail and will, in the long run, bring only suffering and discouragement to the group it was intended to benefit."

Gratifying indeed will it be if the U. S. Department of Labor shall hereafter be conducted for the benefit of all labor, organized and unorganized alike, and in full recognition of the facts as stated by Secretary Davis that

"National stability and prosperity is, therefore, seen to be a problem of maintaining equality and justice between all factors, the worker in production life, the organized worker, the interest of the manufacturer and of the distributor. A policy that will maintain a continuous prosperity for one will maintain it for all."

WASHINGTON AS A NEWS CENTER

THE COUNTRY IS AWAKENING to a tardy realization of what the mining industry recognized several years ago, namely, that Washington is a great news center. The old idea that the Capital provided no worth-while news except of a political nature is about to become dissipated. This evolution in the public's judgment is one of the outstanding features of current comment.

The chief element in news is newness. Nothing which has been told before is a news story. A news center is a place where first-told stories frequently originate, and in this respect Washington is undoubtedly the world's greatest news center. Nearly everything which will be printed in American histories of the future was first told as a news story in Washington.

The first announcement that Hill or Harriman had decided to build or extend a railroad, or that Woolworth would erect a building, was news. Subsequent publication of the completion of plans, of the driving of the first spike, of the laying of a corner-stone, of the holding of dedication ceremonies were but later chapters of an old story. In the modern business world nothing happens; everything is brought about, and things are considered done when competent minds and authorities decree that they shall be done. Decision is the vital thing; all else is mere detail. Announcement that an epoch-marking decision has been rendered is the biggest possible news item. A city in which such announcements are frequently made is a news center, and as an original source of such announcements no other city can even compete with Washington. They are all outclassed, left at the post, beaten before they start.

One might say that New York, with her railroad holdings, her great financial houses and her harbors in which all nations come and go, is a more newsy place than Washington. But no, if New Yorkers want to know whether the ships will land, the railroads lower their rates or the banks tighten up on call money, they must read the news from Washington.

The West, land of gold and silver and copper and romance, comes to Washington for its most important news. The adventurous prospecter doesn't even know whether his claim can be patented until he hears from Washington. Gold, silver and copper operators are so vitally concerned in the disposition of certain measures now before Congress that they demand even more news from Washington than is carried in the daily press, and three thousand of them maintain a service of their own.

But what of the South, whose sunny plantations could clothe half the people in the world and feed them all? There is one news item printed every year which is more important to the South than all others combined. That item tells of the government's estimate of the cotton crop. And it comes from Washington. And right now the South is reading eagerly all news about tariff legislation.

Every householder is interested in transportation because it affects the cost of living. Freight rates must be lowered; any revision downward means a wage cut, and this will inevitably bring about the danger of a nationwide strike. When this danger becomes imminent nothing in the daily press will be quite so important as the news about it. When it becomes positively known that a strike has been averted, or, if one is called, that it has at last been settled, the news of that event will be telegraphed from Washington.

The biggest piece of news printed during the world-war was the announcement that America had joined the fray, because it foretold the inevitable outcome. Hostilities ended more than three years ago, but there is still no peace, and there will be no peace until the world knows what Washington will do. A few weeks ago one of the statesmen of France came to Washington to get the latest news.

Not only in New York, Chicago, San Francisco and New Orleans, but in Berlin, Paris, London, Honolulu, Pekin, Calcutta and Tokyo the Washington date-line commands front-page prominence in all the newspapers. Cut the telegraph wires from Washington and not an important step would be taken in the industrial or financial world until they were restored.

Whether we like it or not, the world takes its orders, and therefore gets its news, from Washington. What many an American business man has overlooked is that the complexion of his balance-sheet is manipulated in Washington, instead of at his plant or factory. Many a prosperous concern has found too late that the thing that turned an anticipated profit into a loss was some little thing which transpired in Washington. But the wisest business men now keep abreast of everything done in Washington.

The mining industry came to Washington several years ago in the knowledge that by so doing it would be right in the middle of everything, and the MINING CONGRESS JOURNAL was established in the firm belief that Washington was the original source of the world's most important news. The wisdom of each move has been fully confirmed.

OIL AND THE COLOMBIAN TREATY

IT IS REFRESHING and encouraging to know that we have a President and a Secretary of the Interior and a Senate leader who are not afraid to help big business.

President Harding asked the Senate to ratify the Colombian treaty. At once the cry was heard, "The oil interests are behind it." Equally as promptly Senator Lodge told his colleagues, "I do not know whether they are or not," but the President has recommended ratification and "I earnestly hope that such will be the view of the Senate." And Secretary Fall, who has heard the same charge reiterated for more than a decade, wrote a letter in which he said, in substance, that whether oil interests were behind the treaty or not they certainly ought to be, and so ought all Americans whose eyes were open and whose patriotism was working. Remarkable as it may seem, neither of the three has as yet been accused of being "controlled" by outside and ulterior influences.

For entirely too long the demarcation between success and failure was considered identical with the dividing line between good and evil. The little business man and the failure in life were always honest, the successful individual and the big corporation were always soulless, and if perchance the latter dealt in oil it was not only soulless but its money was tainted. Hostility to huge corporations was always more or less baseless and indulged in mainly by demagogic officials to curry the favor of uninformed constituents. It is a tribute to the rising plane of public intelligence that such buncombe is not as effective as formerly and is becoming less and less popular.

The war taught us many lessons, not the least important being that giant corporations are public servants indispensable for supplying the manifold needs of a country as large and prosperous as the United States. More emphatically since the war than during the war the public has been reminded that this is an oil age and that the oil resources of the United States must be supplemented by investment of American producing concerns in other countries.

Senator Lodge and Secretary Fall have taken the logical, sensible, patriotic view of the situation. If the legal and international questions involved warrant the ratification of the Colombian treaty, it should be ratified, and the circumstance that several American oil companies may become richer as a consequence should not militate against it. Indeed, it should be considered as an argument in favor of ratification, since an avowed purpose of maintaining amicable relations with foreign countries is that American commerce with all the world may flourish. Naturally, our foreign commerce will not be profitable unless we take in exchange for our own goods commodities of which we stand in need. Oil is undoubtedly one of these commodities.

THE ONE BIG UNION

LITTLE HAS BEEN HEARD in the United States during recent months concerning the one big union. The idea, however, is not dead and its advocates have not lost heart in the ultimate accomplishment of their purpose. They are now "boring from within." A recent expression of this purpose has been made public in a declaration by the British miners' reform movement, the immediate objects of which are:

1. Full wages during times of compulsory unemployment.
2. Five working days a week and a six-hour day.
3. Resistance to local and national reductions.
4. The abolition of piece work.
5. The abolition of the income tax and other impositions on workers.
6. A full wage as compensation for accidental disablement.
7. An annual holiday with pay.

This statement calls attention to the fact that during the war the workers were called "soldiers of industry." Soldiers are paid to be ready to fight and therefore the employers must pay the workers to be ready to work. This latter thought may be the impelling motive which leads the American Federation of Labor to undertake another campaign for the unionization of the steel industry.

At this time the demand for steel products is not such as to justify the full operation of the several steel-making plants. If the industry can be thoroughly unionized and if the industry may be charged with the service of 60 percent of its usual force which is not employed, the cost of steel would naturally be doubled, which would quickly put the whole industry out of commission. The building trades, not being able to purchase the high priced steel, would be called upon to pay their men for readiness to serve and not for actual service and from one line of work to another the interdependent condition of industry would gradually put all men out of work and all men upon the pay roll for readiness to work. Just who is to pay the bills is a difficult question to answer.

OHIO VERSUS RUSSIA

FRED LOUDNER, coal miner, member of Local Union No. 4,196 of the United Mine Workers of America, would probably find it a difficult task to explain wherein free speech and personal liberty in Nelsonville, Ohio, differed from censorship and thraldom in Russia. According to the *United Mine Workers' Journal*, he has been suspended from his local union for twenty-five years for conduct unbecoming a member, his offense consisting of circulating among his fellow workmen a paper reading as follows:

> "We, the miners of mine 208, owing to the great depression in business, agree to mine coal during this time of depression for $1 per ton, without any additional for wet coal, yardage, room turn, or any other extras. We also agree to keep up all entry work for the price of $1.12 per ton. These prices to hold good during the time of depression. All coal mined to be clean, merchantable coal."

All contracts are sacred and should be sacredly kept. Neither party to a solemn agreement has a right to break his pledge, but there is nothing illegal, unreasonable or unjust in either party's seeking a modification of its terms. To deny the right to request revision is to withhold the right of contract itself, and to penalize another for exercising this privilege amounts to the deprivation of the right of contract, the right of free speech, the right of liberty and the right to pursue happiness. The action of the Nelsonville union in abridging the constitutional rights of one of its members is utterly indefensible.

Had the demand for coal suddenly become greater, and had the operators offered to the miners a bonus over and above the contract wage scale as a stimulus to more production, would the union have become incensed? Would it have resented the suggestion that the wage contract be in any respect changed? It is regrettable, but true, that an outsider conversant with Middle West history of the last year is tempted to think that they not only would not have displayed such passionate devotion to the letter of their agreement, but might even have taken a "vacation" as a reminder that times had changed since the agreement was entered into.

In Russia, the workman who disagrees with his comrades of the soviet is suspended from a gallows or otherwise removed. In Nelsonville, he is suspended from the union for twenty-five years, which is equivalent to expulsion. In either case, the oppressor inflicts the heaviest penalty at his command. The difference between justice as dispensed by soviet Russia and that dealt out by the Nelsonville union lies not in the hearts of the administrators, but in the power they exercise.

MINNESOTA'S OCCUPATION TAX ON IRON MINING

RECONSTRUCTION WILL NOT be brought any nearer, the cost of living will not be reduced, and the return of business to normalcy will not be hastened through the enactment of such measures as the six percent occupation tax on iron mining which has just gone into effect in Minnesota. If the companies survive the blow, the consumer will pay the bill through continued high rent, continued heavy transportation charges and continued top prices for all of the thousand and one necessities of life of which iron and steel are constituents.

Persons not familiar with the details of the measure may draw a fairly dependable conclusion as to its inherent evils from the fact that Governor Preus received seven hundred telegrams protesting against it. It is comparatively easy to rally a large following for any proposed law but difficult to rouse the opposition to concerted action. Not often, perhaps not once in a decade, is any proposed state law so altogether bad as to excite the active opposition of seven hundred thinking business men.

The new levy will be in addition to local taxes assessed against mining companies by towns and cities and in addition to the state *ad valorem* tax. Broadly speaking, it requires mining companies to perform all the duties performed by other citizens and then to pay a bonus for the privilege of being progressive, loyal and successful. Neither in Minnesota nor the United States as a whole has the mining industry done anything calling for such discriminatory treatment.

An occupation tax penalizes industry and subsidizes indolence. Levied against those engaged in a basic industry, it passes its burdens down the line through all stages of production, transportation, manufacturing, distribution and on to the ultimate consumer. It cannot be justified. For the state of Minnesota a long legal battle is in prospect, and for iron ore operators several months, perhaps years, of struggling against uncertainty and handicaps at a time when the country needs their utmost efforts, unhampered and unrestricted.

BUSINESS FAILURES LESS THAN NORMAL

DURING THE RECENT PAST startling headlines in many of the papers of the country announced that during the first three months of the current year business failures in the United States averaged 4,870 and comment is made in such a way as to indicate a belief that this is an extraordinarily large number of failures and that conditions tending towards a business panic exist. As a matter of fact there is nothing unusual in this statement and in fact a much larger number might reasonably have been anticipated.

During the five years beginning with 1912, ending in 1916 the average number of failures during the first three months of each of those years was 6,678. It is a matter of great congratulation that, during a time of radical readjustment, when the traders of the country were stocked with goods bought at high price levels, so few failures have occurred. The small number may in part be accounted for by the fact that while wholesale price levels have greatly decreased, the necessity of retailers to sell their goods somewhere near cost is enabling the country to descend to normalcy gradually and with so little financial danger.

REQUIESCAT IN PACE

THE INDIANA special Food and Coal Commission has ceased to exist. It was a lusty child while it lived, for in eight months it spent approximately $30,000, half of which is reported to have been paid out in attorney's fees, and accumulated an additional $70,000 which the state of Indiana will inherit. But the legislature which created it provided that it should expire on March 31, 1921, unless in the meantime something should be done to prolong its life, and from the day of its birth it was such a nuisance to all the neighbors that near the end Governor Warren T. McCray decided it was not worth saving.

In behalf of the commission it was claimed that its operations would effect "enormous savings." The final report of the commission omits all reference to the fulfillment of the prediction. But it is known that in eight months it collected $100,000 in tonnage taxes and license fees from the operators. Consumers or operators, or both, undoubtedly sustained a direct financial loss to this extent.

Now that Indiana has seen the light, it is to be hoped that its rays will penetrate to other states where like darkness prevails.

NATIONALIZATION OF MINES OPENLY ADVOCATED IN WASHINGTON

IT IS TIME TO BE ON GUARD. The standard of bolshevism, pure and undefiled and undisguised, has been raised in Washington and the seizure of American mines is being openly advocated.

Sixteen "associated, recognized, standard railroad labor organizations" publish in Washington a weekly newspaper known as *Labor*. This organ is not published for profit and it receives such powerful support from the unions that it does not need to accept paid advertising. In a recent issue, under the heading, "A Plan for Nationalization of Mines," this paper carried an editorial the first paragraphs of which were as follows:

"In our old school geographies it was called Bohemia. It was a part of the Austro-Hungarian empire then. Now it is the Republic of Czecho-Slovakia and in many respects it is the brightest spot on the map of Central Europe.

"While its neighbors have been wasting their substance on wars and the maintenance of ambitious military establishments, Czecho-Slovakia has been minding its own business, laying the foundations of a representative democracy and quietly developing a plan for nationalization of essential industries.

"A bill to nationalize the mines has been placed before parliament. It contains many interesting features. The mines, as well as the enterprises pertaining to them, such as plants for the manufacture of coke and natural dyes, are to be nationalized."

Then follows a catalog of the "interesting features," the most interesting of which is that owners of confiscated property valued at more than 1,400,000 crowns will be indemnified only fifty percent of their losses, and this at the rate of one percent a year for fifty years. The concluding paragraph of the editorial in *Labor* reads:

"It will be seen that this plan is a near approach to the scheme for government ownership and democratic control advocated by railroad workers in this country."

The above constitutes a double confession in that it shows that *Labor* and the members of the sixteen powerful railroad unions which it represents believe (1) that the Plumb plan, which they advocate, is a "near approach" to bolshevism; (2) that Bohemian bolshevists in stealing the mines were merely "minding their own business."

To raise an army for bolshevism and revolution in America it is not necessary to hang out a red flag, enroll the "comrades" and distribute bombs among the volunteers. It is not even advisable. And to prepare the way for eventual seizure of American railroads and mines it is not necessary to say, in so many words, "Rise, comrades, and take possession." That also would be inadvisable. But the same message is conveyed by innuendo through printing a newspaper story that Hungarian workmen are seizing their employers' property and making the editorial comment that in so doing they are attending to their own business and making their country a "bright spot." The suggestion that American workmen should in like manner convert this country into a "bright spot" is clearly discernible, and was manifestly intended to be. It does not take a Philadelphia lawyer to interpret such an editorial as an out-and-out advocacy of the seizure of American mines.

It is time to be on guard. The enemy is not at the gates, he is within the gates, posing as a law-abiding working man whose theories about government and economics are slightly different from our own. Yet a little while, if permitted to operate unhindered, and he will have converted others of the idle and the indolent to his way of thinking—and acting. It is time not only to be on guard, but like sensible Americans to meet the issue. Otherwise, the issue may suddenly become an army.

THE PRESIDENT'S MESSAGE

NOTHING PARTICULARLY NEW or startling was observable in President Harding's first message to Congress, and in this circumstance is one of the elements of strength manifest in the document. The new administration went into office on a platform calling for certain definite performances and the Executive's initial communication to the Legislative Department was in the nature of a reminder that now is the time to make good. That was all, and that was enough.

"Back to business" was a winning slogan in the campaign of last November. It was a leading thought in the President's inaugural address. It stands out in every paragraph of his message, in nearly every sentence, and is seen between the lines.

Revision of existing tax laws and enactment of protective tariff measures must of necessity be parts of any reconstructive program, for there can be no profitable business without the former and no business at all without the latter. The emphasis given by the President to this character of legislation and to other sorely needed enactments was by way of amplification of the general program. The administration has a contract with the people. In demanding national economy, settlement of transportation problems and an American peace the President laid on the table a draft of plans and specifications for carrying out the agreement.

The whole will of the people and the full purpose of the President were summed up in the latter's invitation to the House and Senate to join with him "in the efforts to find our normal, onward way." The mining industry joins devoutly with the President in the hope for early attainment of this aim.

EMERGENCY TARIFF BILL

THE RAPIDITY with which Congress took action upon the Emergency Tariff and Anti-Dumping bills will have a desirable effect in enabling the country to go from the higher price level to a more nearly normal rate by a less precipitous route and therefore with greater safety. At no previous time in history have conditions been such as to permit so radical a drop in the average price of all commodities without producing an industrial panic.

The steadying effect of the Federal Reserve Bank System, the effort of retailers to sell high-cost goods with as little loss as possible, the holding back of cheaper production from the consumer, has really been of great advantage in that an industrial crisis has been avoided. The enactment of the Emergency Tariff Bill is an evidence of the desire of the administration and Congress to get from the mountain peak to the valley by a circuitous route and to avoid falling over the precipice.

The Emergency Tariff Bill is what its name implies, an emergency bill. It is believed that the present session of Congress will enact a regular tariff bill which will meet the necessities of normal conditions or at least those conditions which are likely to prevail for a few years and until a change in the law may again seem advisable.

IMMENSE COAL RESERVE

THE BULL MOUNTAIN coal field, in Musselshell county, Mont., according to an estimate made by the United States Geological Survey, contains nearly five billion tons of coal. A small part of this immense reserve of coal has already been mined, but by comparison with the total in the ground, the quantity mined is practically negligible.

DR. BAIN APPOINTED DIRECTOR OF THE BUREAU OF MINES

DR. H. FOSTER BAIN was appointed director of the Bureau of Mines by President Harding on April 16. Dr. Bain had been serving as acting director since the resignation of Dr. Cottrell. He was appointed by President Wilson, but not confirmed. His reappointment by President Harding and confirmation by the Senate have been confidently expected. When the appointment was made he was on a tour of the Bureau's experiment stations.

EX-GOVERNOR HOOPER REPRESENTS PUBLIC ON RAILROAD LABOR BOARD

VACANCIES on the Railroad Labor Board were filled by President Harding April 16. Ben W. Hooper, formerly governor of Tennessee, was appointed to represent the public group; Samuel Higgins of New York, to represent the management group; and Walter McMeniman to represent the labor group.

Mr. Hooper, who represents the public, was formerly heavily interested in Oklahoma oil properties. He is the only Republican who was ever elected governor of Tennessee twice, and had been prominently mentioned for appointment as Commissioner of Internal Revenue. Mr. Higgins was formerly General Manager of the New York, New Haven & Hartford Railroad. Mr. McMeniman is deputy president of the Brotherhood of Railway Trainmen, and was recently called into conference by President Harding.

FEBRUARY REFINERY STATISTICS

THE CRUDE RUN of refineries during February amounted to 22,411,819 barrels, and the total of oils purchased and re-run was 1,420,415 barrels, Bureau of Mines figures. Output during the month was as follows: gasoline, 13,863,866 gallons; kerosene, 5,824,354 gallons; gas and fuel oil, 26,162,229 gallons; lubricants 2,586,865 gallons; wax, 1,442,300 lbs.; coke, 1,965 tons; asphalt, 2,661 tons; miscellaneous, 4,288,420 gallons; losses, 51,442 barrels.

There were 291 refineries in operation, with a daily capacity of 1,692,090 barrels. This was a reduction of 20 operating plants and 28,935 barrels in daily capacity as compared with January.

Daily average production of gasoline was about 1,000,000 gallons less than in January, but stocks of gasoline were increased during the month by approximately 108,000,000 gallons. This amount was 117,000,000 gallons more than stocks for the same date in 1920, and was the largest stock of gasoline on record.

SURVEY TAKES STOCK OF COAL SUPPLY

STOCKS OF COAL in the hands of consumers on April 1 will be tabulated by the Geological Survey, acting upon orders of Secretary of the Interior Fall. The survey during the last month sent out questionnaires to all large consumers calling for reports of stock on hand January 1, coal received from January 1 to March 31, coal consumed during the same period, estimated losses from shrinkage, fire or other causes, and amount still on hand April 1. The report is to cover bituminous and lignite, but not anthracite.

Results of this questionnaire will, it is believed, settle the controversy as to whether coal reserves above ground are below or above the safety line. It has been claimed that consumers are digging too deeply into their reserves.

WORLD OIL CRISIS AS VIEWED IN CONNECTION WITH COLOMBIAN TREATY

THAT A SERIOUS CRISIS exists with relation to the oil supply of America and the world was asserted by Senator Henry Cabot Lodge of Massachusetts, in an address before the Senate on April 12, as a controlling argument in favor of immediate ratification of the Colombian treaty. In support of his own position, the Senator read a letter from Secretary of the Interior Fall which has been pronounced the most exhaustive analysis of the oil situation, as affected by rivalry between the United States and Great Britain, which has yet been made.

By agreement during the Sixty-sixth Congress, the Colombian treaty was given the right of way during the first days of the extra session. It was ratified April 20 by a vote of 69 to 19.

The "charge" that American oil interests were behind the Colombian treaty was mentioned by Senator Lodge, who asserted he did not know whether they were or not but that he did know the question of oil was a vital one and that American investors in Colombian oil properties should have protection and encouragement. He discussed the ever-increasing importance of oil both in business and as a factor in the national defense, and insisted that American developments in Colombia would pass into the hands of British interests unless our investors could be made to understand that they would be protected.

"This," he said, "is one of the important features of good relations with Colombia and with all South America, but particularly with those countries in the north where the oil fields are said to lie."

In his reference to the oil situation, Senator Lodge spoke as follows:

SENATOR HENRY CABOT LODGE

I have heard it said that the oil interests are supporting this treaty. I do not know whether they are or not. No one interested in the production of oil has ever spoken to me on the subject so far as I am aware, but I know, and everybody else who has studied the subject knows, that the question of oil is one that is vital to every great maritime nation. Oil goes much beyond the mere economic value of the trade or of the production. The use of oil-burning engines both in merchantmen and in ships of war makes it vital to the carriers of our commerce and, what is still more important, to our power of defense by sea. Our own production of oil, great as it has been, is beginning to show undoubted signs of limitation both in the life of the wells and the amount of production. It would be a very serious matter to this country, incalculably grave, if we are cut off by the government competition of other nations from an increasing oil supply. I am entirely against having the United States invest money in any enterprises or enter into business of any kind. I do not believe that this would be a sound system for our Government to pursue. I think, however, that it is absolutely necessary that we should give to American investors in foreign countries the protection which American citizens in other countries are entitled to so long as they obey the laws of the country in which they may be operating.

We must stand behind our own people wherever they may be in the world, whether in business or merely as travelers. In this direction the United States has been careless and indifferent and in some instances, notably in Mexico, much worse than careless. If we are to extend our foreign trade in South America and the East, Americans who invest their money in those countries and who live according to the laws of the foreign country in which they are placed must always be sure that they have behind them their own Government and that they will receive the protection to which they are entitled. Our Government in the past has in certain cases actually gone to the point of taking the position that an American citizen or an American corporation making investments in another country was not entitled to any protection, that they were to be frowned upon instead of being encouraged. I regard this as an absolutely false policy, and if we persist in it we shall not only make the expansion of our commerce impossible but we shall find ourselves very much weakened in securing those articles necessary to our business life and to the life of our people, like oil, rubber, and other great raw materials of equal importance. If American capital is willing and ready, with the assurance that their rights are to be protected in foreign countries, to invest in those countries and thereby develop and enlarge our trade, it should be encouraged and praised, not berated and attacked. So far as oil is concerned I wish the Senate would examine the table which has been prepared in the Interior Department, copies of which are here for the use of Senators. I would have them see graphically the manner in which England is taking possession of the oil supply of the world.

Mr. Chamberlain announced the other day in the House of Commons that England still controlled the Anglo-Persian Company and England also controls the Royal Dutch and Shell Transport combination, whose holdings are exhibited in the table. We must not only enlarge our trade, but we must enlarge our sources for a supply of oil wherever it is possible to do so, and we can not do it if we take the position that it is a sin for Americans to make money and that those who are engaged in foreign investment and foreign commerce are to be punished instead of being sustained. If Americans are willing to put in large amounts of capital for the production of oil, they are entitled to make money, and I hope they will. The Government will not be involved financially, but will simply be called upon to do what every other government does and what we ought always to do—protect its citizens in their lawful trade in other countries. The indications are very strong that the very large oil fields, perhaps the largest in the world, are on the point of development in Venezuela and Colombia. American companies have already started in Colombia, but they will pass into the hands of the powerful British combination if our people can not at least understand that they will be protected against wrong and injustice if they invest in countries other than their own for the purpose of furnishing the United States with oil and enlarging our commerce. This is one of the important features of good relations with Colombia and with all South America, but particularly with those countries in the north where the oil fields are believed to lie. These are some of the arguments which seemed to me very strongly to justify, in fact to demand, the ratification of this treaty.

Secretary Fall, who, as Senator, became intimately conversant with the Colombian treaty during the Roosevelt administration, was even more emphatic, if such were possible, than Senator Lodge in emphasizing the necessity for supplementing America's oil supply. He said he had been particularly impressed by the seriousness of the present crisis with relation to oil throughout the world, also with the way Great Britain was meeting the crisis, and added: "It is high time that Americans should understand the situation and as patriotic Americans deal with it."

Two letters from Secretary Fall were read by Senator Lodge. One dealt with political considerations involved in the Colombian treaty, the other exclusively with the oil crisis. The latter follows:

Hon. Henry Cabot Lodge,

United States Senate, Washington.

My Dear Senator: As I have set forth in the accompanying communication to you, explaining Col. Roosevelt's attitude, as I understood it, I have learned that the claim is made that the sentiment, or efforts, in behalf of the ratification of the present Colombian treaty, with amendments, pending, is brought about by propaganda in favor of American oil companies, or other interests.

SECRETARY ALBERT B. FALL

I can not speak for others, but I may say for myself that I am most thoroughly impressed with the seriousness of the present crisis with relation to the oil developments throughout the world.

I say "crisis," and desire to emphasize "crisis" as the proper expression to use under the circumstances.

The people of the United States have for years been bombarded with all kinds of statements concerning the "predatory" oil interests of this country and the fact that such selfish interests have endeavored to force this country even into a war for the purpose of protecting their "dirty dollars" or of adding to the wealth of conscienceless, piratical, American oil adventurers and monopolists.

Various bureaus and departments of this Government have endeavored, particularly within the last two years, to throw some light upon true conditions with relation to oil, and to arouse the patriotic American people to the realization that truly we are confronted with a "crisis" which will have a serious influence upon the future prosperity and actual safety of this country as the "crisis" may be met and dealt with intelligently or otherwise.

It is true that American oil men are the pioneer prospectors in the oil fields of the world; it is true that oil drills and oil machinery, managed by Americans, are in use in every oil development on the face of the earth; it is true that geologists attached to the staff of one of the departments of this Government are, when not immediately needed, loaned to oil companies or individuals, on furlough, without pay, and that their reports, brought back from Africa, South America, Asia, and Europe, furnish a more or less comprehensive understanding of the oil situation and of the "crisis" of which I speak.

Other nations are aware of the seriousness of the situation, and Great Britain learned at least one lesson from the recent war. That is to say, that the nation which controlled the oil industry controlled commerce by sea, in view of the fact that no coal burner can compete with an oil-burning ship.

Realizing this, Great Britain, the nation, has, within the la t two years particularly, followed a policy which she had adopted in many of her provinces many years ago, that is, of excluding Americans from or placing heavy burdens upon such Americans or other foreigners in any British oil field.

Within the last two years, however, taught by the lessons of the war, Great Britain has deliberately pursued a policy of obtaining governmental control of all the great oil companies in which British subjects had been interested, and, going beyond this, has secured practical, if not sole, control of the great "Royal Dutch-Shell," and other foreign companies, particularly through what is known as the "Royal Dutch-Shell Group" combine, which was effected in January, 1907.

Of course, it is impossible to give exact figures, but our Government, through at least two of its departments, has information satisfactory beyond question, that the British Government actually controls the "Royal Dutch-Shell" combine, 60 percent of the stock of which is owned by the Royal Dutch, and 40 percent of whose stock was owned by the Shell Transport & Trading Co. (Ltd.).

I am handing you herewith several copies of a very striking diagram, prepared by the Department of the Interior of the United States, from information obtained through our geologists and other entirely reliable sources.

You will at once note the extensive holdings of this British national enterprise in the States of Oklahoma and California in the United States.

You will notice in the extreme left portion of this diagram the British companies which are operating particularly in the Island of Trinidad and Venezuela.

In the lower right-hand portion of this diagram you will find the interlocking British National companies which control British petroleum holdings in the Republic of Mexico.

The Mexican Eagle Oil Co. (Ltd.), known to us as the "Aguila" company, is the principal "Cowdray" company in Mexico.

Allow me to call your attention here to a most significant matter which has recently occurred, i. e.:

The British Government and the French Government have each repeatedly protested to the Mexican Government, from time to time, along exactly similar lines to the protests made by this Government concerning the confiscatory decrees of the Mexican Government under the Constitution of 1917, proclaimed by Carranza, and being followed by Obregon.

These protests yet stand as the official last word of Great Britain and France, as exactly similar protests yet stand as our last word to that country.

The Mexican Eagle Co. ("Aguila") has been a member of the American Association of Oil Companies and has for years co-operated with this association in making protests against confiscatory decrees in Mexico, both from the British Government and the American Government.

Recently, within the last three months, the "Aguila" Co. finally notified the American association that it proposed to pursue its own lines and make its own terms with the Mexican Government, accepting the Mexican Government's demands with reference to oil drilling permits, etc.

This came as a shock out of a clear sky, and I am informed that after certain protests made by the association and by the American companies, the Mexican Eagle ("Aguila") Co. has not, in fact, obtained titles under this confiscatory decree, upon properties belonging to others, but, yet, has not countermanded instructions to its agents in Mexico to obtain such titles from time to time.

Nevertheless the British protest still stands and Great Britain is ostensibly acting with the United States officially, in identical official protests against the constitution of 1917 and decrees under it.

The British "Aguila" Oil Co., owned, as a matter of fact, by Great Britain herself, is, however, yielding to such decrees and obtaining advantage of American companies, who are faithfullly abiding by the advice and instructions of the American Government in the matter.

British oil interests are giving every assurance to Obregon, and Mexican officials, of their support and friendly co-operation, seeking advantage against or over American companies, while the British Government, owning this oil company, is ostensibly standing by the United States Government in its action.

I bring these matters to your attention, and am furnishing you with the diagram referred to, for the reason that it is high time that Americans should understand the situation and as patriotic Americans deal with it.

I am also handing you herewith a map of the world, showing, most graphically, the situation with reference to oil, as such situation is being influenced by the Royal Dutch-Shell combination.

Extending from Holland and England, you will notice the lines of the industries of this combination reaching all over the world.

From the best information obtainable the actual investments in money and value of property of British nationally owned oil companies, are practically double in amount the capitalization of all American oil companies operating in the United States and elsewhere.

The American oil developer and producer in the United States, in Mexico, in Mesopotamia, in Africa, in South America, and elsewhere, working by himself, with practically no protection from his Government, and abused and vilified by American authorities in high place, must come in competition with the great British nation, realizing its duty to itself and encouraging and supporting its citizens with national funds wherever they may be able to obtain a footing through private manipulation or national influence in every country of the world.

Great Britain, as usual, has a policy of upbuilding and assisting its citizens in upbuilding the nation, while the American has no protection, and many of its prominent men are engaged, as usual, in retarding every effort of the individual citizens of this country in their individual development, and objecting to any protection of them as American citizens.

The Royal Dutch Shell combine, owned by Great Britain, as will be seen from this map inclosed; from the diagram handed you, and from the list of producing, etc., companies attached to this map, controls the oil fields of Venezuela which are developing by leaps and bounds into magnificent, wonderful oil producers.

Adjoining these Venezuela fields to the east, lie the Colombian oil fields, as yet largely undeveloped, and which can never be developed properly except by the investment of tens of millions of dollars in the construction of pipe lines to the seacoast.

American oil men are pioneers here as in Venezuela.

Colombia hoping for close relations and practical co-operation with us, based upon mutual interests in the Panama Canal and ocean-trade routes, has, during this last Colombian administration particularly, been exceedingly friendly to American investors and has not received the advances of British capitalists with the same degree of favor.

Americans are heavily interested in Colombia, where indications are that one of the great oil fields of the world may, at an early date, if these Americans are properly protected, add its wealth to that of this country.

In Latin America, as in the Orient, trade follows the investment. During the great war Latin-American trade could only seek American markets and to-day the United States is in the position where, if by governmental policy it assists its citizens in the matter of mere protection in their investments, the United States can bind to itself the great trade of this hemisphere, 80 percent of which has, prior to the war, gone to enrich the countries of the Old World.

Thus far it is undoubtedly true that American oil interests are much interested in the friendly settlement of all outstanding difficulties with Colombia and in drawing more closely the commercial relations of the two countries through political friendship.

Activities of the oil companies are directed, generally, by intelligent, broad-minded American business men, who, of course, realize as do other thinking American citizens, that upon governmental action largely depends the success of individual investment and consequent trade wealth.

Believing, as Theodore Roosevelt and others believed, that friendly and very close relations with Colombia are absolutely necessary for the safety of the Panama Canal, and of American interests, and realizing as they do, that friendly relations between the two Governments must exist as a preliminary and as prerequisite to the development of Colombia's natural resources by American capital, it is doubtless true that American oil companies are urging ratification of the present treaty.

The matters just referred to—that is, the fact that Great Britain as a nation has gone into the oil business since the report of the Senate minority was made in 1917, show such a change in conditions since the latter date as will justify very serious thought and even serious effort to meet conditions as they now exist.

In other words, world conditions and international conditions on this continent have changed exactly as they have changed throughout the world. Each country is now called upon to meet these changed conditions.

We are more justified now than we were, even in 1917, therefore, in going to any extreme which our self-respect and our great respect and love and honor for the great American, Roosevelt, will justify in carrying out that great American policy which he so clearly understood, even if some person not understanding conditions and misunderstanding his attitude may criticize us as having changed our own opinions at the dictation of some greasy oil corporation.

Remember this, Senator, the American investor in the Orient must come into competition with the Japanese Government in all trade activities; American oil developers and producers must come in competition, throughout the world and upon his own soil, with the great British Government as a Government engaged in the same activities. Have not conditions changed?

Are we not justified in reconsidering preconceived ideas based, possibly, upon an erroneous understanding of the then existing conditions and concerning which conditions at least have changed during the last two years?

Most sincerely, yours,

[Signed] Albert B. Fall.

COLOMBIA'S DISCRIMINATORY LAWS HAVE BEEN NULLIFIED

IN AN ADDRESS to the Senate urging ratification of the Colombian treaty, Senator McCumber of North Dakota referred to the decision of the Colombian Supreme Court confirming the constitutionality of mineral concessions to American citizens. He said the good faith of Colombia toward the United States has been manifested in this decision concerning the rights of Colombia to its vast mineral oils. Under the old Spanish law all minerals in her possession belonged to the state. When Colombia became an independent state, it became possessed of all rights to minerals therein. After Americans had obtained large concessions and oil interests in Colombia, it was declared by the Colombian government that these oils, wholly unknown to Spain and to the world in olden times, came under the designation of minerals and should be controlled by the Colombian government.

This claim was protested by Americans and the Senator said it was well understood by Colombia that the United States would not make a treaty with her unless Colombia's claim to the mineral lands, which had been asserted only after large concessions had been granted and vast sums spent in development, was repudiated. The Colombian Supreme Court finally confirmed the constitutionality of the concessions granted to American citizens and repudiated the claim that petroleum oil was a mineral in the sense used in the old Spanish law and the Colombia constitution and as such the property of the state. The Senator said this decision was of great value to American citizens and was no doubt desired by Colombia to clear the way for the treaty.

Senator McCumber said he was influenced in favor of the treaty by the immense opportunities which would be opened up to American capital and commerce in the development of the vast oil fields of Colombia, as the United States was intensely interested in the future world's supply of petroleum. He said if reports are to be relied upon, no place in the world has potential possibilities of oil supply comparable with those of Colombia. The United States should protect American rights in the South American Republics, he said, and therefore should ratify the treaty.

SENATE COMMITTEES

ALL SENATE COMMITTEES were appointed April 18, and are as follows:

Agriculture and Forestry: Messrs. Norris (chairman), Page, Kenyon, Wadsworth, McNary, Capper, Keyes, Gooding, Ladd, Norbeck, Smith, Ransdell, Kendrick, Harrison, Heflin and Caraway.

Appropriations: Messrs. Warren (chariman), Smoot, Jones (Washington), Curtis, Kenyon, Hale, Spencer, Phipps, Newberry, McKinley, Overman, Owen, Culberson, Harris, Glass and Jones (New Mexico).

To Audit and Control the Contingent Expenses of the Senate: Messrs. Calder (chairman), McCormick, France, Jones (New Mexico) and McKellar.

Banking and Currency: Messrs. McLean (chairman), Page, Frelinghuysen, Penrose, Calder, Newberry, Weller, Norbeck, Owen, Hitchcock, Pomerene, Fletcher, Kendrick and Glass.

Civil Service: Messrs. Sterling (chairman), Cummins, Colt, Ball, Nicholson, Stanfield, Bursum, McKellar, Ransdell, Wolcott and Heflin.

Claims: Messrs. Spencer (chairman), Frelinghuysen, New, Capper, Gooding, Harreld, Ernst, Stanfield, Robinson, Trammell, Wolcott, Broussard and Watson (Georgia).

Commerce: Messrs. Jones of Washintgon (chairman), Nelson, Fernald, Calder, Lenroot, McNary, Ball, Edge, Willis, Weller, Fletcher, Ransdell, Sheppard, Simmons, Dial and Caraway.

District of Columbia: Messrs. Ball (chairman) Dillingham, Capper, Elkins, Gooding, Cameron, Weller, Pomerene, King, Sheppard, Glass and Stanley.

Education and Labor: Messrs. Kenyon (chairman), Borah, Sterling, Phipps, Warren, Kellogg, Shortridge, Jones (New Mexico), McKellar, Wolcott and Walsh (Massachusetts).

Enrolled Bills: Messrs. Sutherland (chairman), Ball and Dial.

Expenditures in the Executive Departments: Messrs. McCormick (chairman), Moses, Willis, Oddie, Underwood, Swanson and Robinson.

Finance: Messrs. Penrose (chairman), McCumber, Smoot, La Follette, Dillingham, McLean, Curtis, Watson, Calder, Sutherland, Simmons, Williams, Jones (New Mexico), Gerry, Reed and Walsh (Massachusetts).

Foreign Relations: Messrs. Lodge (chairman), McCumber, Borah, Brandegee, Knox, Johnson, New, Moses, Kellogg, McCormick, Hitchcock, Williams, Swanson, Pomerene, Pittman and Shields.

Immigration: Messrs. Colt (chairman), Dillingham, Penrose, Sterling, Johnson, Keyes, Willis, King, Harris, Harrison and Watson (Georgia).

Indian Affairs: Messrs. Curtis (chairman), La Follette, McNary, Spencer, Harreld, Cameron, Ladd, Ashurst, Owen, Walsh (Montana) and Kendrick.

Interoceanic Canals: Messrs. Borah (chairman), Page, Colt, Knox, Johnson, Edge, McKinley, Walsh (Montana), Simmons, Trammell and Ransdell.

Interstate Commerce: Messrs. Cummins (chairman), Townsend, La Follette, Poindexter, McLean, Watson, Kellogg, Fernald, Frelinghuysen, Elkins, Smith, Pomerene, Myers, Underwood, Wolcott and Stanley.

Irrigation and Reclamation: Messrs. McNary (chairman), Jones (Washington), Phipps, Gooding, Cameron, Oddie, Shortridge, Sheppard, Walsh (Montana), Kendrick and Pittman.

Judiciary: Messrs. Nelson (chairman), Dillingham, Brandegee, Borah, Cummins, Colt, Sterling, Norris, Ernst, Shortridge, Culberson, Overman, Reed, Ashurst, Shields and Walsh (Montana).

Library: Messrs. Brandegee (chairman), Wadsworth, Jr., Knox, McCumber, Williams, McKellar and Broussard.

Manufacturers: Messrs. La Follette (chairman), Kenyon, Fernald, McNary, McKinley, Nicholson, Weller, Smith, Pomerene, Jones (New Mexico) and Reed.

Military Affairs: Messrs. Wadsworth (chairman), Warren, Sutherland, New, Frelinghuysen, Lenroot, Spencer, Capper, Cameron, Bursum, Hitchcock, Fletcher, Myers, Sheppard, McKellar and Robinson.

Mines and Mining: Messrs. Poindexter (chairman), Sutherland, Newberry, Oddie, Nicholson, Norbeck, Walsh (Montana), Ashurst and Pittman.

Naval Affairs: Messrs. Page (chairman), Penrose, Lodge, Poindexter, Hale, Ball, Newberry, Keyes, France, Nicholson, Swanson, Pittman, Walsh (Montana), Gerry, Trammell and King.

Patents: Messrs. Johnson (chairman), Norris, Brandegee, Ernst, Smith, Stanley and Broussard.

Pensions: Messrs: McCumber (chairman), Smoot, Elkins, Townsend, Colt, Weller, Bursum, Walsh (Montana), King, Walsh (Massachusetts) and Gerry.

Post Offices and Post Roads: Messrs. Townsend (chairman), Sterling, France, Moses, Edge, Elkins, Phipps, Herrald, Oddie, Stanley, McKellar, Walsh (Massachusetts), Dial, Heflin, Watson (Georgia) and Broussard.

Printing: Messrs. Moses (chairman), Capper, Nelson, Townsend. Fletcher, Ransdell and Robinson.

Privileges and Elections: Messrs. Dillingham (chairman), Spencer, Wadsworth, Jr., Watson, Edge, Ernst, Shortridge, Bursum, Pomerene, Reed, Walsh (Montana), King and Walcott.

Public Buildings and Grounds: Messrs. Fernald (chairman), Warren, Frelinghuysen, France, Lenroot, Keyes, McKinley, Harreld, Reed, Ashurst, Culberson, Trammell and Swanson.

Public Lands and Surveys: Messrs. Smoot (chairman), Norris, Poindexter, Lenroot, Ladd, Stanfield, Norbeck, Bursum, Myers, Pittman, Jones (New Mexico), Kendrick and Walsh (Montana).

Revision af the Laws: Messrs. Ernst (chairman) and Kellogg.

Rules: Messrs. Knox (chairman), Nelson, Curtis, Hale, Moses, McCormick, Watson, Overman, Owen, Underwood, Harrison and Robinson.

Territories and Insular Possessions: Messrs. New (chairman), McLean, Cummings, Knox, Johnson, McCormick, Willis, Ladd, Pittman, Owen, Robinson, Harris and Broussard.

ESCH AND WHITE CONFIRMED

THE SENATE on April 19 confirmed the appointment of John J Esch, formerly congressman from Wisconsin, as a member of the Interstate Commerce Commission, and of Ex-governor Frank White of North Dakota as treasurer of the United States.

RELIEF LEGISLATION TO BE PUSHED BY HOUSE MINING COMMITTEE

JOPLIN SHOWS NEED OF TARIFF

The need of protective tariff for American minerals, as seen in Joplin, Missouri, is well illustrated by a story told around the capital by W. S. Wade, a business man of Springfield, Missouri. Mr. Wade said he was standing on a prominent corner in Joplin in conversation with a citizen of that city, when the deserted aspect of one of the main streets was commented upon. The Joplin citizen very promptly said to him, "You can shoot a splatter-gun up the streets of Joplin at any time, day or night, and never hit a soul."

THE HOUSE COMMITTEE on Mines and Mining, of which Congressman Marion E. Rhodes of Missouri is chairman, is planning several legislative enactments for relief of the industry. Chairman Rhodes recently stated to THE MINING CONGRESS JOURNAL that the mining industry was in a worse condition than it has been for fifty years.

"In my district," Mr. Rhodes said, "which is the leading producer of lead, barytes, and cobalt in the United States, practically every mine is closed today or wages have been cut from 20 to 30 percent, and people are out of employment by the thousands. This condition prevails not only in Missouri but largely throughout the United States in every mining section. It will be the policy of this committee to do whatever it can to help the mining interests."

One measure of permanent relief which this committee proposes to secure will be the passage of a law changing the time of doing annual assessment work from December 31 to July 31, or, in other words, making the year in which the work is done correspond with the fiscal year instead of the calendar year as now. There is a widespread demand for this law from the mining sections.

This committee also proposes that Congress acquire the title to the ground on which the Government Fuel Yards in Washington are located, and make it a permanent agency, perhaps enlarging upon the powers of the Bureau of Mines in this respect. The Bureau is authorized under the existing law to purchase coal for government departments in Washington. This committee proposes that the Bureau be made the agency for purchasing all the fuel, whether coal, oil, or otherwise, for all the various government agencies in the United States.

The fuel yards are reported to have saved the government approximately $200,000 during the last two years. If the same percentage of economy can be effected on all government fuel purchases in the United States, the saving brought about thereby will amount to a very large sum.

The bill with reference to the fuel yards has already been introduced by Representative Rhodes. It provides, however, that any branch of the federal service may make fuel purchases direct upon the approval of the director of the bureau. The bill authorizes the bureau to investigate government fuel burning equipment and methods of handling, storing and using fuel, and to make recommendations calculated to effect fuel economy. It likewise authorizes the bureau to contract for fuel in advance of the availability of the appropriations. The various government departments are to pay the bureau not exceeding 5 cents per ton upon coal purchases and 1 mill per barrel upon fuel oil purchases for analyses or tests.

"This committee," Mr. Rhodes said, "will consider some permanent legislation of a general character for the relief of war minerals producers. During the war, the demand was widespread for production of certain minerals, and the cessation of hostilities found many patriotic producers in a position to sustain great losses. This committee believes that Congress ought to give the right of appeal to all claimants whose cases have been determined by the war boards. There is a demand from Alabama to Oregon, and in fact from every state that has produced any of the forty minerals specified in the War Minerals Act. Whatever this committee can do to assist in relieving existing conditions, it will certainly do."

TARIFF LEGISLATION MAY REQUIRE SEVERAL MONTHS

GENERAL TARIFF REVISION, drafting of laws for which are now in progress, will reach the stage of actual consideration of specific bills during this month, probably between May 15 and June 1. Legislation will be based on the information gathered at hearings and executive sessions which began January 4, in all of which the American Mining Congress participated. It is expected that the revised tariff will become a law by October

The Ways and Means Committee is continuing its executive sessions in consideration of the framing of the actual schedules. It is presumed that there will be no further hearings before the Ways and Means Committee but that the Bill will be reported out by the Committee based on the data and evidence already submitted.

The question of small percentages of mineral substances contained in ores or like material imported in sufficient quantity to be assayable but not in recoverable quantity being subject to tariff duties has been raised. In discussion with the administrative officials of the customs office it is their assurance that material not contained in recoverable quantity will not be subject to duty and it is probable that, if necessary, a proviso to this effect will be inserted in the law

REPEAL OF PITTMAN ACT OPPOSED

OPPOSITION to repeal of the Pittman Act authorizing purchase of silver by the government at $1.00 per ounce is expressed by Baker, Small & Company, engineers and financiers of Boston in a letter to Representative Tague of Massachusetts, which has been referred to the House Committee on Mines and Mining. The company states that those advocating repeal of the act are uninformed as to its workings and as to the needs of the silver industry of the United States. They hold that the fundamental element in the business life of the country is the producer, especially the miner and farmer.

"The mining industry is undergoing a decided and unprecedented slump," says the petition, "and it is well that the government has recognized that the time has arrived when it could extend a helping hand to the miner without the miner putting a helping hand into the Treasury of the United States."

The company asks that, should the matter come up, due weight be given to the justice of the Pittman Act and to the justness of the miners' claim that the act be upheld. It is stated that silver mining presents the only bright spot in the dark clouds of depression and uncertainty now existing.

HOUSE COMMITTEES

ON THE OPENING DAY of Congress, the Republican majority elected its members of all standing committees, and the Democratic minority chose members of the Ways and Means and Rules committees. Following is the complete roster of the latter two, and the majority membership of other committees which will handle matters of interest to mining:

Ways and Means: Majority members—Joseph W. Fordney (chairman), Mich.; William R. Green, Iowa; Nicholas Longworth, Ohio; Willis C. Hawley, Oreg.; Allen T. Treadway, Mass.; Ira C. Copley, Ill.; Luther W. Mott, N. Y.; George M. Young, N. Dak.; James A. Frear, Wis.; John Q. Tilson, Conn.; Isaac Bacharach, N. J.; Lindley H. Hadley, Wash.; Charles B. Timberlake, Colo.; George M. Bowers, W. Va.; Henry W. Watson, Pa.; Alanson B. Houghton, N. Y.; Thomas A. Chandler, Okla. Minority members—Claude M. Kitchin, N. C.; John N. Garner, Tex.; James W. Collier, Miss.; William A. Oldfield, Ark.; Charles R. Crisp, Ga.; John Carew, N. Y.; W. P. Martin, La.; Peter Tague, Mass.

Appropriations: James W. Good (chairman), Iowa; Charles R. Davis, Minn.; Martin B. Madden, Ill.; Daniel R. Anthony, Jr., Kans.; William S. Vare, Pa.; Joseph G. Cannon, Ill.; C. Bascom Slemp, Va.; Sydney Anderson, Minn.; William R. Wood, Ind.; Louis C. Cramton, Mich.; Patrick H. Kelley, Mich.; Edward H. Wason, N. H.; Walter W. Magee, N. Y.; George Holden Tinkham, Mass.; Burton L. French, Idaho; John A. Elston, Calif.; Milton W. Shreve, Pa.; Charles F. Ogden, Ky.; William H. Stafford, Wis.; James W. Husted, N. Y.; Elijah C. Hutchinson, N. J.; Robert E. Evans, Nebr.; L. J. Dickinson, Iowa.

Banking and Currency: Louis T. McFadden (chairman), Pa.; Porter H. Dale, Vt.; Edward J. King, Ill.; Frank D. Scott, Mich.; Adolphus P. Nelson, Wis.; James G. Strong, Kans.; Leonard S. Echols, W. Va.; Edward S. Brooks, Pa.; Robert Luce, Mass.; Clarence Macgregor, N. Y.; James W. Dunbar, Ind.; Lester D. Volk, N. Y.; T. Frank Appleby, N. J.; Henry F. Lawrence, Mo.; E. Hart Fenn, Conn.

Coinage, Weights, and Measures: Albert H. Vestal (chairman), Ind.; John M. Rose, Pa.; Clifford Ireland, Ill.; Florian Lampert, Wis.; John Reber, Pa.; R. Clint Cole, Ohio; Michael J. Hogan, N. Y.; Frank H. Funk, Ill.; W. M. Morgan, Ohio; William H. Frankhauser, Mich.; Thomas J. Ryan, N. Y.; Randolph Perkins, N. J.; J. Kuhio Kalanianaole, Hawaii.

Interstate and Foreign Commerce: Samuel E. Winslow (chairman), Mass.; James S. Parker, N. Y.; Burton E. Sweet, Iowa; Walter R. Stiness, R. I.; John G. Cooper, Ohio; Edward E. Denison, Ill.; Everett Sanders, Ind.; Schuyler Merritt, Conn.; J. Stanley Webster, Wash.; Evan J. Jones, Pa.; Carl E. Mapes, Mich.; William J. Graham, Ill.; Sherman E. Burroughs, N. H.; Walter H. Newton, Minn.; Homer Hoch, Kans.

Foreign Affairs: Stephen G. Porter (chairman), Pa.; John Jacob Rogers, Mass.; Henry W. Temple, Pa.; Ambrose Kennedy, R. I.; Edward E. Browne, Wis.; Merrill Moores, Ind; William E. Mason, Ill.; Ernest R. Ackerman, N. J.; James T. Begg, Ohio; Henry Allen Cooper, Wis.; Theodore E. Burton, Ohio; Benjamin L. Fairchild, N. Y.; Hamilton Fish, Jr., N. Y.; Theodore W. Hukriede, Mo.; Walter F. Lineberger, Calif.

Post Office and Post Roads: Halvor Steenerson (chairman), Minn.; William W. Griest, Pa.; Calvin D. Paige, Mass.; Harry C. Woodyard, W. Va.; C. William Ramseyer, Iowa; Archie D. Sanders, N. Y.; Samuel A. Kendall, Pa.; Guy U. Hardy, Colo.; C. Ellis Moore, Ohio; M. Clyde Kelly, Pa.; John C. Ketcham, Mich.; Roscoe C. Patterson, Mo.; Archibald E. Olpp, N. J.; John J. Gorman, Ill.; Richard E. Bird, Kans.; Dan A. Sutherland, Alaska.

The Public Lands: Nicholas J. Sinnott (chairman), Oreg.; Addison T. Smith, Idaho; Hays B. White, Kans; William N. Vaile, Colo.; Henry E. Barbour, Calif.; John S. Benham, Ind.; John W. Summers, Wash.; Don B. Colton, Utah; Nestor Montoya, N. Mex.; Olger B. Burtness, N. Dak.; W. M. Morgan, Ohio; Lon A. Scott, Tenn.; Washington J. McCormick, Mont.; Charles L. Faust, Mo.; Dan A. Sutherland, Alaska.

Indian Affairs: Homer P. Snyder (chairman), N. Y.; Philip P. Campbell, Kans.; Royal C. Johnson, S. Dak.; Frederick W. Dallinger, Mass.; Albert W. Jefferis, Nebr.; R. Clint Cole, Ohio; John Reber, Pa.; Alice M. Robertson, Okla.; E. O. Leatherwood, Utah; Nestor Montoya, N. Mex.; L. M. Gensman, Okla.; Sidney C. Roach, Mo.; Washington J. McCormick, Montana; Olger B. Burtness, N. Dak.; Dan A. Sutherland, Alaska.

The Territories: Charles F. Curry (chairman), Calif.; Albert Johnson, Wash.; Cassius C. Dowell, Iowa; Louis T. McFadden, Pa.; Edward S. Brooks, Pa.; James G. Strong, Kans.; Joseph McLaughlin, Pa.; Allen F. Moore, Ill.; Charles L. Knight, Ohio; Albert B. Rossdale, N. Y.; George P. Codd, Mich.; J. Kubio Kalanianaole, Hawaii; Dan A. Sutherland, Alaska.

Insular Affairs: Horace M. Towner (chairman), Iowa; Charles; E. Fuller, Ill.; James P. Glynn, Conn.; John I. Nolan, Calif.; Frederick N. Zihlman, Md.; Harold Knutson, Minn.; Louis W. Fairfield, Ind.; John C. Kleczka, Wis.; Edgar R. Kiess, Pa.; Frank Murphy, Ohio; Edgar C. Ellis, Mo.; Herbert W. Taylor, N. J.; L. M. Gensman, Okla.; Carroll L. Beedy, Me.

Railways and Canals. Loren E. Wheeler (chairman), Ill.; John S. Benham, Ind.; Oscar E. Keller, Minn.; Nathan D. Perlman, N. Y.; Harris J. Bixler, Pa.; Warren I. Lee, N. Y.; Joseph D. Beck, Wis.; Elliott W. Sproul, Ill.; John C. Speaks, Ohio.

Mines and Mining: Marion E. Rhodes (chairman), Mo.; Leonard S. Echols, W. Va.; John M. Robsion, Ky.; Edwin B. Brooks, Ill.; Oscar R. Luhring, Ind.; Charles R. Connell, Pa.; Samuel S. Arentz, Nev.; William Williamson, S. Dak.; Don B. Colton, Utah; Dan A. Sutherland, Alaska.

Education: Simeon D. Fess (chairman), Ohio; Horace M. Towner, Iowa; Frederick W. Dallinger, Mass.; Albert H. Vestal, Ind.; Edward J. King, Ill.; Daniel A. Reed, N. Y.; John M. Robsion, Ky.; Adolphus P. Nelson, Wis.; Clarence D. Coughlin, Pa.; Samuel A. Shelton, Mo.

Labor: John I. Nolan (chairman), Calif.; Frederick N. Zihlman, Md.; Norman J. Gould, N. Y.; Oscar E. Bland, Ind.; William J. Burke, Pa.; William O. Atkeson, Mo.; Joseph D. Beck, Wis.; Ogden L. Mills, N. Y.; Charles L. Knight, Ohio.

Patents: Florien Lampert (chairman), Wis.; Albert H. Vestal, Ind.; William J. Burke, Pa.; Randolph Perkins, N. J.; Samuel A. Shelton, Mo.; Andrew N. Petersen, N. Y.; Joe Brown, Tenn.; Joseph H. Himes, Ohio; Carroll L. Beedy, Me.

Claims: George W. Edmonds (chairman), Pa.; Edward C. Little, Kans.; Clifford Ireland, Ill.; James P. Glynn, Conn.; John M. Rose, Pa.; Oscar E. Keller, Minn.; Edgar C. Ellis, Mo.; Charles L. Underhill, Mass.; Michael J. Hogan, N. Y.; William H. Frankhauser, Mich.; John C. Speaks, Ohio.

War Claims: Bertrand H. Snell (chairman), N. Y.; Benjamin K. Focht, Pa.; Stuart F. Reed, W. Va.; James G. Strong, Kans.; Daniel A. Reed, N. Y.; John C. Kleczka, Wis.; Lon A. Scott, Tenn.; Sidney C. Roach, Mo.; I. Clinton Kline, Pa.; Harry C. Gahn, Ohio.

Revision of the Laws: Edward C. Little (chairman), Kans.; Charles E. Fuller, Ill.; Isaac Siegel, N. Y.; William H. Kirkpatrick, Pa.; Adam M. Wyant, Pa.; Herbert W. Taylor, N. J.; Benjamin L. Rosenbloom, W. Va.; Roy G. Fitzgerald, Ohio.

Irrigation of Arid Lands: Moses P. Kinkaid (chairman), Nebr.; Nicholas J. Sinnott, Oreg.; Edward C. Little, Kans.; Addison T. Smith, Idaho; John W. Summers, Wash.; Henry E. Barbour, Calif.; E. O. Leatherwood, Utah; William Williamson, S. Dak.; Samuel S. Arentz, Nev.; Manuel Herrick, Okla.

Expenditures in the Interior Department: Aaron S. Kreider (chairman), Pa.; Henry E. Barbour, Calif.; William Williamson, S. Dak.; Don B. Colton, Utah; Alice M. Robertson, Okla.

Rules: Majority members—Philip P. Campbell (chairman), Kans.; Bertrand H. Snell, N. Y.; William A. Rodenberg, Ill.; Simeon D. Fess, Ohio; Aaron S. Kreider, Pa.; Porter H. Dale, Vt.; Royal C. Johnson, S. Dak.; Thomas D. Schall, Minn. Minority members—Edward W. Pou, N. C.; Finis J. Garrett, Tenn.; James A. Cantrill, Ky.; Dan Riordan, N. Y.

Industrial Arts and Expositions: Oscar E. Bland (chairman), Ind.; Louis W. Fairfield, Ind.; Clifford Ireland, Ill.; William J. Burke, Pa.; Joseph McLaughlin, Pa.; Thomas J. Ryan, N. Y.; Manuel Herrick, Okla.; John C. Speaks, Ohio; Michael J. Hogan, N. Y.; Robert S. Maloney, Mass.

Flood Control: William A. Rodenberg (chairman), Ill.; Charles F. Curry, Calif.; Thomas D. Schall, Minn.; Stuart F. Reed, W. Va.; Oscar R. Luhring, Ind.; Frank Murphy, Ohio; Edgar C. Ellis, Mo.; Roy G. Fitzgerald, Ohio; Andrew N. Petersen, N. Y.

MINORITY COMMITTEE ASSIGNMENTS

MEMBERS of House committees were selected by the minority late in April, as follows:

Agriculture: H. M. Jacoway, Arkansas; John W. Rainey, Illinois; James B. Aswell, Louisiana; David H. Kincheloe, Kentucky; Marvin Jones, Texas; Peter G. Ten Eyck, New York.

Alcoholic Liquor Traffic: William D. Upshaw, Georgia; John C. Box, Texas; B. G. Lowrey, Mississippi; Hampton P. Fulmer, South Carolina.

Appropriations: Joseph W. Byrns, Tennessee; Thomas U. Sisson, Mississippi; James P. Buchanan, Texas; James A. Gallivan, Massachusetts; James F. Byrnes, South Carolina; Gordon Lee, Georgia; Ben Johnson, Kentucky; Charles D. Carter, Oklahoma; Edward T. Taylor, Colorado; William B. Oliver, Alabama; Thomas W. Harrison, Virginia; Anthony J. Griffin, New York.

Banking and Currency: Otis Wingo, Arkansas; Henry B. Steagall, Alabama; Charles H. Brand, Georgia; William F. Stevenson, South Carolina; Eugene Black, Texas; T. Alan Goldsborough, Maryland.

Census: William W. Larsen, Georgia; Samuel M. Brinson, North Carolina; John R. Tyson, Alabama; Morgan G. Sanders, Texas; John J. McSwain, South Carolina; John E. Rankin, Mississippi.

Claims: Henry B. Steagall, Alabama; James P. Woods, Virginia, John C. Box, Texas; W. Turner Logan, South Carolina; Alfred L. Bulwinkle, North Carolina.

Coinage, Weights, and Measures: Samuel M. Brisnon, North Carolina; Clay Stone Briggs, Texas; Lilius B. Rainey, Alabama; Patrick H. Drewry, Virginia; Ladislas Lazaro, Louisiana; B. G. Lowrey, Mississippi.

Disposition of Useless Executive Papers: Arthur B. Rouse, Kentucky.

District of Columbia: James P. Woods, Virginia; Christopher D. Sullivan, New York; Thomas L. Blanton, Texas; Ralph Gilbert, Kentucky; William C. Hammer, North Carolina; Charles F. X. O'Brien, New Jersey; Stanley H. Kunz, Illinois.

Education: William B. Bankhead, Alabama; Charles H. Brand, Georgia; Samuel M. Brinson, North Carolina; B. G. Lowrey, Mississippi.

Election of President, Vice President, and Representatives in Congress: William W. Rucker, Missouri; Clay Stone Briggs, Texas; Hampton P. Fullmer, South Carolina; Alfred L. Bulwinkle, North Carolina; T. Alan Goldsborough, Maryland.

Elections No. 1: C. B. Hudspeth, Texas; William B. Bowling, Alabama; Ralph Gilbert, Kentucky.

Elections No. 2: Frank Clark, Florida; Hallett S. Ward, North Carolina; Morgan G. Sanders, Texas.

Elections No. 3: Zebulon V. Weaver, North Carolina; John C. Box, Texas; W. Turner Logan, South Carolina.

Enrolled Bills: Ladislas Lazaro, Louisiana; Thomas L. Blanton, Texas; John J. McSwain, South Carolina.

Expenditures in Department of Agriculture: Robert L. Doughton, North Carolina; Morgan G. Sanders, Texas.

Expenditures in Department of Commerce: Henry B. Steagall, Alabama; Joseph T. Deal, Virginia.

Expenditures in Department of Interior: Charles H. Brand, Georgia; Tilman B. Parks, Arkansas.

Expenditures in Department of Justice: Schuyler Otis Bland, Virginia; T. Alan Goldsborough, Maryland.

Expenditures in Department of Labor: Riley J. Wilson, Louisiana; Thomas L. Blanton, Texas

Expenditures in Department of Navy: Rufus Hardy, Texas; Patrick H. Drewry, Virginia.

Expenditures in Post Office Department: Benjamin G. Humphreys, Mississippi; James P. Woods, Virginia.

Expenditures in State Department: William W. Rucker, Missouri; W. Turner Logan, South Carolina.

Expenditures in Treasury Department: R. Walton Moore, Virginia; William B. Bankhead, Alabama.

Expenditures in War Department: Edward B. Almon, Alabama; Ewin L. Davis, Tennessee.

Expenditures on Public Buildings: Zebulon V. Weaver, North Carolina; John R. Tyson, Alabama.

Flood Control: Benjamin G. Humphreys, Mississippi; Riley J. Wilson, Louisiana; Herbert J. Drane, Florida; Clay Stone Briggs, Texas; William J. Driver, Arkansas.

Foreign Affairs: Henry D. Flood, Virginia; J. Charles Linthicum, Maryland; Charles M. Stedman, North Carolina; Adolph J. Sabath, Illinois; Tom Connally, Texas; W. Bourke Cockran, New York.

Immigration and Naturalization: Adolph Sabath, Illinois; John E. Raker, California; Riley J. Wilson, Louisiana; John C. Box, Texas; Lilius B. Rainey, Alabama.

Indian Affairs: Carl Hayden, Arizona; William J. Sears, Florida; Zebulon V. Weaver, North Carolina; F. B. Swank, Oklahoma; Ross A. Collins, Mississippi; Hampton P. Fulmer, South Carolina; Morgan G. Sanders, Texas.

Industrial Arts and Expositions: Fritz G. Lanham, Texas; William C. Lankford, Georgia; Otis Wingo, Arkansas; Morgan G. Sanders, Texas; Joseph T. Deal, Virginia; F. B. Swank, Oklahoma.

Insular Affairs: Finis J. Garrett, Tennessee; Christopher D. Sullivan, New York; Benjamin G. Humphreys, Mississippi; R. Walton Moore, Virginia; William B. Bowling, Alabama; Tilman B. Parks, Arkansas; Hallett S. Ward, North Carolina.

Interstate and Foreign Commerce: Alben W. Barkley, Kentucky; Sam Rayburn, Texas; George Huddleston, Alabama; Clarence F. Lea, California; Paul B. Johnson, Mississippi; Harry B. Hawes, Missouri.

Invalid Pensions: William W. Rucker, Missouri; Thomas H. Cullen, New York; Ewin L. Davis, Tennessee; Charles F. X. O'Brien, New Jersey; Stanley H. Kunz, Illinois.

Irrigation of Arid Lands: Carl Hayden, Arizona; C. B. Hudspeth, Texas; John E. Raker, California; Homer L. Lyon, North Carolina.

Judiciary: Robert Y. Thomas, Jr., Kentucky; Hatton W. Sumners, Texas; Andrew J. Montague, Virginia; James W. Wise, Georgia; John N. Tillman, Arkansas; Fred H. Dominick, South Carolina.

Labor: Eugene Black, Texas; William D. Upshaw, Georgia; Ross A. Collins, Mississippi; George K. Favrot, Louisiana; Meyer London, New York.

Library: Frank Park, Georgia; Ralph Gilbert, Kentucky.

Merchant Marine and Fisheries: Rufus Hardy, Texas; Ladislas Lazaro, Louisiana; William B. Bankhead, Alabama; Ewin L. Davis, Tennessee; Thomas H. Cullen, New York; Herbert J. Drane, Florida; Schuyler Otis Bland, Virginia.

Military Affairs: William J. Fields, Kentucky; Percy E. Quin, Mississippi; Hubert F. Fisher, Tennessee; William C. Wright; Georgia; Philip H. Stoll, South Carolina; Daniel E. Garrett, Texas.

Mines and Mining: Otis Wingo, Arkansas; Lilius B. Rainey, Alabama; George K. Favrot, Louisiana; F. B. Swank, Oklahoma; Meyer London, New York.

Naval Affairs: Lemuel P. Padgett, Tennessee; Daniel J. Riordan, New York; Carl Vinson, Georgia; James V. McClintic, Oklahoma, Guy E. Campbell, Pennsylvania; James O'Connor, Louisiana.

Patents: Ewin L. Davis, Tennessee; Schuyler Otis Bland, Virginia; Fritz G. Lanham, Texas; William B. Bowling, Alabama; William C. Hammer, North Carolina.

Pensions: William D. Upshaw, Georgia; William C. Hammer, North Carolina; John J. McSwain, South Carolina; John E. Rankin, Mississippi; Joseph T. Deal, Virginia.

Post Office and Post Roads: Thomas M. Bell, Georgia; Arthur B. Rouse, Kentucky; James M. Mead, New York; Lucian W. Parrish, Texas; John H. Smithwick, Florida; Rorer A. James, Virginia.

Printing: William F. Stevenson, South Carolina.

Public Buildings and Grounds: Frank Clark, Florida; James C. Cantrell, Kentucky; Frank Park, Georgia; William W. Rucker, Missouri; Fritz G. Lanham, Texas; George K. Favrot, Louisiana; Homer L. Lyon, North Carolina.

Public Lands: John E. Raker, California; Carl Hayden, Arizona;

Robert L. Doughton, North Carolina; William W. Larsen, Georgia; Patrick H. Drewry, Virginia; William J. Driver, Arkansas; Ross A. Collins, Mississippi

Railways and Canals: Herbert J. Drane, Florida; Thomas H. Cullen, New York; William C. Lankford, Georgia; Hallett S. Ward, North Carolina.

Reform in the Civil Service: Eugene Black, Texas; Homer L. Lyon, North Carolina; Meyer London, New York.

Revision of the Laws: R. Walton Moore, Virginia; Rufus Hardy, Texas; Alfred L. Bulwinkle, North Carolina; John R. Tyson, Alabama; John N. Sandlin, Louisiana.

Rivers and Harbors: Samuel M. Taylor, Arkansas; H. Garland Dupre, Louisiana; James W. Overstreet, Georgia; Joseph J. Mansfield, Texas; John McDuffie, Alabama; John J. Kindred, New York.

Roads: Robert L. Doughton, North Carolina; Edward B. Almon, Alabama; William W. Larsen, Georgia; R. Walton Moore, Virginia; William J. Sears, Florida; C. B. Hudspeth, Texas; John N. Sandlin, Louisiana.

Territories: Zebulon V. Weaver, North Carolina; William C. Lankford, Georgia; Edward B. Almon, Alabama; Patrick H. Drewry, Virginia; John E. Rankin, Mississippi; William J. Driver, Arkansas.

War Claims: Frank Clark, Florida; John J. McSwain, South Carolina; John N. Sandlin, Louisiana; Charles F. X. O'Brien, New Jersey; B. G. Lowrey, Mississippi.

Woman Suffrage: John E. Raker, California; Frank Clark, Florida; Christopher D. Sullivan, New York; Thomas L. Blanton, Texas.

FEDERAL TRADE COMMISSION MAKES REPORT ON PRICES

THE FEDERAL TRADE COMMISSION on April 16 issued its report to the President on prices, which was briefly referred to by the President in his message to Congress, in which he recommended a price inquiry. The commission holds that the decline in prices of materials has been uneven but has resulted from a very general but likewise uneven decline in consumptive demand for manufactured products. It has affected raw material prices to a greater extent than those of manufactured or wholesale commodities. Retail prices to the consumer have least been affected. Manufacturers are still confronted by high transportation costs of raw materials and by a cost of labor which either has not decreased or has decreased less than those of raw materials. The commission holds that a decline in the cost of raw materials does not indicate a wholly proportionate decrease in the cost of manufacture.

"Fundamental in the cost of living is the housing shortage and the excessive price of fuel," says the commission. "High rents and high coal prices limit the general buying power for other commodities." The commission holds that the domestic market for many products has been unfavorably affected by centralized buying organizations representing foreign purchasers for export, which combinations have often been able to influence domestic market prices. It mentions, for example, British agencies which purchase American phosphate rock for use as artificial fertilizer. Among foreign groups acting in combinations in selling articles which American farmers buy from abroad are mentioned the Chilean Nitrate Producers' Syndicate, which has directly affected the prices of commodities, ncluding commercial fertilizer.

The commission discusses activities of open-price associations, and says the public dissemination of data obtained by them and now used for the exclusive benefit of their members might make their operation of benefit to the producer and consumer, but that the tendency is to confine the information to members and bring about uniform prices and maintain them at an artificially high level by curtailing production or supply, although concerted agreement characteristic of combinations forbidden by the Anti-Trust Law is lacking.

The commission holds that there are too many distributing units between the producer and the consumer for the most economic handling of business. It says the manufacturer, jobber and retailer are more effectually able to resist price reduction than producers of raw products because they are more closely organized, have better credit facilities, and because of their location enjoy superior advantages in transportation and storage.

The commission argues in favor of government collection of information with reference to the adjustment of manufacturers', wholesalers' and retailers' prices in any industry and declares that the determination of production costs is an essential element in determining the propriety or average sales realization or of prices on particular sales. It also says that a government body authorized to ascertain costs should have authority to determine accounting methods by which costs are to be computed, whether in production or distribution, as present accounting systems tend to substitute average cost for actual costs.

OIL MAN BECOMES SECOND ASSISTANT POSTMASTER GENERAL

COL. EDWARD H. SHAUGHNESSY, assistant director of the division of transportation of the American Petroleum Institute, was appointed Second Assistant Postmaster General on April 11. He succeeded Otto H. Praeger. Col. Shaughnessy served overseas as an officer in the Thirteenth Engineers, attained to the rank of colonel and earned the Distinguished Service Medal. He was in France two years. During the first year he was connected with the French army in railroad work at the front. Later he was general manager and acting deputy director general of transportation in advance of the American army. He became connected with the American Petroleum Institute in 1920.

SAFETY MEETING COMMITTEEMEN

COMMITTEES IN CHARGE of the International Mine Rescue and Safety First meeting at St. Louis on September 2 and 3 next have been appointed by the Bureau of Mines. W. K. Kavanaugh of the Southern Coke and Coal Company is chairman of the Program and Arrangements Committee. Others who will participate in reception and arrangements consist of Eugene McAuliffe, Dr. G. Pernoud, Francis E. Turin, Dr. Royal R. Sayers, Girard Warman, Dorsey J. Parker (Pittsburgh), Walter Nesbit (Springfield, O.), C. A. Herbert (Vincennes, Ind.), George Heppe (Moberly, Mo.), W. D. Ryan (Kansas City), W. S. Bedal, Walter M. Smith, Paul V. Dunn, Bert Barnett, Dr. R. Vitt, L. F. Lurnaghi, President 5th and 9th Districts, Illinois Coal Operators Association, Dr. J. J. Rutledge, Southwest District Bureau of Mines, Carl Smith of the St. Louis Safety Council, W. J. Jenkins, P. J. Stremmel, Clarence Howard, Charles F. Hatfield, P. H. Burns, American Red Cross of St. Louis.

POLISH MARKET FOR U. S. COPPER

INFORMATION has reached the Department of Commerce to the effect that Polish industries would be glad to have advice whereby they can receive shipments of American copper. Polish copper mines are inadequate, and many Polish industries dependent upon copper are idle because of inability to secure raw material. Arrangements have already been made for purchase through Great Britain of large quantities of ordinary and electrolytic copper, antimony, zinc, and mercury.

OFFICIAL STATE EXHIBITS WILL FEATURE MINING CONGRESS CONVENTION

SEVERAL WESTERN STATES have appointed committees to arrange exhibits for the National Exposition of Mines and Mining Equipment to be held in conjunction with the twenty-fourth annual convention of the American Mining Congress, in Chicago, October 17–22. Semi-official announcements presage numerous displays of an unusually high order and the attendance of delegations of record size.

John E. Miller, whose work as superintendent of exhibits at the Denver convention elicited such general approval, and who will fill the same position this year, arrived in Chicago late in April to stay on the job until the next convention. He expects to have charts and rules and regulations ready for use of prospective exhibitors within the next ten days.

While it is too early to announce even tentative details of the program, it can nevertheless be stated that at the various conferences there will be discussions of all of the great topics of direct interest to mining operators. Among the probable conference topics are taxation, production and cost, labor, transportation, standardization, gold production, commercial development of by-products, development of non-metalliferous ores, national finances, mine management and handling of men, mineral tariffs, and government control of industry. The committee in charge will devote several weeks to consideration before making definite announcements.

Chairman Francis S. Peabody of the Illinois Committee on Arrangements called a meeting of his co-workers on April 7. The committee has been meeting frequently, and every member is taking a personal interest in all plans for furthering the convention and exposition.

Governor Carey of Wyoming has appointed State Senator A. D. Kelley, State Immigration Commissioner C. S. Hill, and State Geologist G. B. Morgan to arrange for a comprehensive exhibit of Wyoming mineral products, especially crude and refined oils. Wyoming's exhibit will be the first one to show comprehensively the products of the state's oil fields and refineries, and the committee has been instructed to make it the best which has been gathered together from that state since the World's Columbian Exposition, better known as the World's Fair, held in Chicago twenty-eight years ago.

After Mr. Burns had visited Spokane, the mining committee of the Spokane Chamber of Commerce decided unanimously that that state should be represented at the Chicago Convention and Exposition. J. C. Haas, W. J. Kirby, and John M. Semple were named as a committee to investigate and make preliminary plans.

At Spokane the suggestion was made that on account of business depression, 1921 would not be a good year in which to stage the biggest mine and mining equipment exposition ever held. But after thorough discussion, the business men came to the conclusion that general conditions in the late summer and early fall would be decidedly better than they are now, and that it would be of decided advantage to the mining industry to have a very large exhibit and use it as a means of securing a share of the anticipated prosperity.

Seattle has decided to assist in financing an exhibit from Alaska as well as from the State of Washington. Many of the largest Alaska mine operators make their headquarters in Seattle. J. L. McPherson, manager of the Alaska Bureau of the Seattle Chamber of Commerce, sent a telegram to Governor Riggs of Alaska urging the participation of the territory in the exposition. Falcon Joslin, chairman of a special committee of Seattle business men appointed to secure the Alaska exhibit, did the same thing. As a result, partly, of these telegrams, John A. Davis, chairman of the Alaska Chapter of the American Mining Congress, early last month, sent a letter to the Alaska legislature urging an appropriation for the Alaska exhibit at Chicago. The communication was referred to the Ways and Means Committee. Governor Riggs has personally requested the legislature to make this appropriation.

Governor Charles R. Mabey of Utah has appointed the following committee to arrange for a Utah exhibit at the Chicago Convention:

C. E. Allen, S. F. Ballif, Ernest Bamberger, J. A. Barclay, J. M. Bidwell, Ralph Bristol, Dr. J. E. Broaddus, L. S. Cates, W. H. Child, R. K. Cobb, Fred Cowans, W. L. Ellerbeck, Walter Fitch, O. J. Grimes, Moroni Heiner, J. B. Jenson, H. S. Joseph, Thomas Kearns, J. William Knight, G W. Lambourne, J. A. MacIlwee, A. G. Mackenzie, D. MacVichie, Dr. Joseph F. Merrill, A. C. Milner, M. P. Morrissey, J. F. Nibley, R. H. Peale, Imer Pett, E. J. Raddatz, Professor F. W. Reynolds, V. S. Rood, O. J. Salisbury, M. H. Sowles, F. A. Sweet, J. R. Walker, W. R. Wallace, J. B. Whitehill, G. M. Winkelman.

California has not only decided to send an exhibit and a big delegation to Chicago, but has entered the field early for the 1922 convention in case the meeting next year is held outside of Chicago. A committee of leading mining men to get together a state exhibit is now in process of formation. Mr. Burns attended the meeting of the California Metal and Mineral Producers Association, and received pledges of support. The association also sent a letter to Governor W. D. Stephens urging his approval of the movement to secure a state appropriation so that California can participate officially in the Chicago meeting. Fletcher Hamilton, state mineralogist of California, extended a personal invitation to the Governor to head the delegation of representative mining men who will go to Chicago.

CHAIRMAN CHANNON, OF EXPOSITION COMMITTEE, IS OPTIMISTIC

"I believe I am safe in saying that present indications are that never before in the history of the mining industry and the manufacture of equipment used in connection with mining, has there been such concerted good feeling and spirit of co-operation evidenced.

"We have already reserved space for the states of Minnesota, Montana, Washington, Oregon, California, Nevada, Utah, Colorado, Wyoming, Arizona and the territory of Alaska. A total of 14,000 feet has been reserved.

"In addition to this, the government of the United States will send here five big exhibits representing the Bureau of Mines, Geological Survey, Bureau of Good Roads, General Land Office and Public Health Service. The governments of Canada and Mexico will be represented by very large and comprehensive exhibits of the mineral products of those two nations.

"Other states are being organized, and we believe that the First National Mining Show will be an event of which we may all be proud. Also, it will recreate public confidence through a demonstration of self-belief in the mining industry and in the manufactures connected therewith."

Among those present at the San Francisco meeting besides Mr. Burns and Mr. Hamilton were: Edwin Higgins of the Bulkley-Wells National Exploration Company; William G. Devereaux of the Melones Mining Company; W. H. Levings, representing President Robert Newton Lynch of the San Francisco Chamber of Commerce; Robert L. Webb, executive secretary of the San Francisco Convention and Tourist League, and S. G. Bucklee of the San Francisco Boosters' Committee.

Both the Chamber of Commerce and the San Francisco Tourist and Convention League will back the movement to take the 1922 Convention and Exposition to San Francisco. It is believed that this movement, together with California's often demonstrated interest in the American Mining Congress, will cause at least 200 men from that State to go to Chicago.

The Chicago Coliseum has been leased for this mining exposition. A great electric fountain will play its myriads of colors upon the Alaskan exhibit which will occupy the center of the show, and, with the mining operators of Alaska backed by the Governor of that territory, thoroughly aroused to the importance of bringing Alaska into public notice at this time, it is expected that the Alaskan exhibit will be one of the most interesting of its kind ever made in the United States.

Grouped around the great electric fountain and the products of America's northern-most mining camps will appear the various states, including Minnesota, which will exploit her vast storehouses of iron and unlimited millions of tons of commercial peat; Montana, which although, until recently known most widely as being the greatest copper producing state on this continent, is now breaking into the public eye with unusual petroleum possibilities; Washington, with her silver and copper, her vast storehouses of magnesite which have released the United States from commercial bondage to Austria, with the newly found copper fields and vast coal resources; California, which first made possible the gold standard for the world through the hidden wealth of the gold in her hills, with hundreds of various minerals and non-metalliferous substances, with her petroleum, marble and onyx; Nevada, which in itself is a treasure-house, and which has already assembled one of the finest mineral exhibits ever made by any state in the union; Utah, whose hills are filled with almost unlimited and undeveloped mineral supplies, with coal and marble as a commercial background and with an incoming petroleum field which is now attracting the attention of the world; Colorado, noted for gold, silver, lead, zinc, coal, phosphate, potash, and innumerable substances which have brought, and will still bring, unlimited wealth to the people of that state; Wyoming, until recently practically unknown as a mineral producer, but which now occupies a leading place in the petroleum world, and whose hills are filled with iron, copper, asbestos and many other commercial substances; Oregon, with her great resources in gold, platinum, silver and many other wealth-producing commercialized deposits; and Arizona, underlaid with a wealth of copper, gold, asbestos and similar metals and minerals.

Surrounding the states will appear the various exhibits of the coal producing centers, some of the exhibits being made by states officially and some by organizations of coal producers. Mingled with these metals and coal exhibits it is expected that the commercialized by-products of the various subtances shown will be demonstrated both as to method of manufacture and commercial use.

It will be shown that copper, zinc, lead and other basic substances reach into the daily life of the nation, and an effort will be made to demonstrate the economic importance of the protection, development and constant production from all phases of mines throughout the nation. The cost of production, the method of handling, the hazards in operating and methods of distribution will be illustrated so far as is possible throughout the entire exposition.

There will be seven grand divisions of the exposition, including coal and metals, construction materials, fuel, standardized machinery and equipment, general machinery and accessories, safety and life saving devices, transportation, petroleum, oil shale and oil shale products, etc

A number of governors have already accepted invitations to participate in the twenty-fourth annual convention of the American Mining Congress which will be held in connection with the exposition, and it is expected that the program will be one of the most notable discussions of vital national problems ever staged in the United States.

UTAH CHAPTER WANTS QUICK TARIFF ACTION

IMMEDIATE ACTION by Congress to prevent the dumping of foreign mineral products is necessary for protection of the American mining industry, in the opinion of members of the Utah Chapter of the American Mining Congress. Several members of the Utah Chapter have signified their intention of coming to Washington to confer with the Tariff Division of the American Mining Congress regarding plans of procedure.

A. G. Mackenzie, Secretary of the Utah Chapter, recently stated that such great havoc was being wrought to domestic metal prices by the dumping of foreign metals in the United States that it had become virtually impossible to operate any kind of a mine. "Only the pegging of the price of silver at $1 per ounce by the provisions of the Pittman Act has made it possible for the silver mines of the West to continue operations," Mr. Mackenzie said. "Now the price of lead has dropped to such a level that the situation for even silver-lead mines is gloomy. With foreign lead being dumped in the United States, the price of the gray metal is held at 4 cents per pound and if this should continue it will be impossible for even the silver-lead properties to operate.

The closeness of the margin upon which silver mines are operating can be appreciated when it is understood that the net profit of the Kelly Mine of Randsburg, California, which produces a high grade gold-silver ore, is measured by the difference between the domestic price and the foreign price of silver. This is considered a bonanza mine, and yet it could not operate at present except for the Pittman Act.

It is considered practically impossible for properties which produce only a small amount of silver in comparison with their lead tonnage to operate so as to make a profit. Many mines in the Couer d' Alene district have already closed out, while others are staying open at a loss.

Utah operators, according to Mr. Mackenzie, have resorted to heroic measures to reduce the cost of production. They have cut wages and either curtailed or stopped development work, and are mining only the best ores, leaving the lower grade minerals in the ground in the hope that times will eventually become better. It is Mr. Mackenzie's opinion that tariff measures which will be enacted by the present extra session of Congress will give metal producers of the entire United States adequate protection. It is confidently believed, hovever, in some of the western states that the emergency in which the metal mining industry finds itself is so great that mining will suffer a still further and almost irreparable injury if enactment of tariff laws is postponed for six months or a year.

FOREIGN DIVISION OF AMERICAN MINING CONGRESS

THE STEADY INCREASE in the scope of its activities makes it important for the American Mining Congress to keep in close touch with the local as well as national problems, which confront mining operators in all parts of the country.

This requires a personal contact. To establish this contact a Field Secretary, E. C. Porter, has been appointed for the purpose of keeping the Washington headquarters of the American Mining Congress fully and accurately informed in regard to the point of view of the mine operator.

Mr. Porter has had considerable experience in work of this character. Since the completion of his education at Beloit College, Beloit, Wisconsin, and in the School of Business Administration at Harvard University, Mr. Porter was connected with the Merchants' Association of New York, was Manager of the New York Office of the Bureau of Foreign and Domestic Commerce during 1914 and 1915, and more recently was the Executive Secretary of the American-Russian Chamber of Commerce, an organization created in 1916 with the support of influential business interests for the purpose of developing closer business relations between the United States and Russia.

E. C. PORTER
Field Secretary of the American Mining Congress

In addition to his work in the field Mr. Porter will also have charge of the preliminary development of the recently organized Division of Foreign Affairs of the American Mining Congress. The Division of Foreign Affairs will have as its primary purpose the securing of full information in regard to mineral resources in foreign countries and the actual production of minerals. Such information will be of value in furnishing a basis for establishing proper safeguards for protecting American mining industries and safeguarding American interests.

Although primarily interested in the successful development of American mining enterprises, it is recognized that the incidental investment of American capital in mining enterprises abroad will be a helpful factor in bringing about a restoration of normal industrial conditions throughout the world. The American Mining Congress, through the work of the Division of Foreign Affairs, hopes to be able to render assistance to American interests in such developments. The successful development of the investment of American capital in mining enterprises abroad will be dependent upon the adoption by the National Government of a policy which will persistently support American interests in securing their legitimate rights.

HARD-PRESSED ARIZONA OPERATORS AID THEIR EMPLOYES

DEEP CONSIDERATION has been given the copper situation by the members of the Arizona Chapter of the American Mining Congress. The leading operators are members of the chapter, and at practically every meeting this question is the foremost topic of discussion.

Serious industrial conditions arise with the closing down not only of the large porphyry mines but the smaller high-grade copper properties in Arizona. The closing down of the Inspiration Consolidated Copper Company, which employs between 1,400 and 1,500 men, will work great hardship in the Globe District. In addition to the number of men employed by the company direct, a large force of men who are employed at the International Smelting Company's plant will be affected through the closing down of a number of blast furnaces.

The closing of the Anaconda Copper Mining Company's mines will throw out of employment between 5,000 and 6,000 miners and in addition approximately 1,300 men employed in that company's ore reduction plant at Great Falls will be laid off. It is also anticipated that this company will reduce its force on the Butte-Anaconda-Pacific Railroad and in its coal mines and its lumbering plants. The action of the Anaconda, while far reaching in its effects upon its own producing force alone, will also be a serious handicap to those mills to which it sends its ore for treatment.

One bright ray of light percolating through the gloom is that the Copper Queen Branch of the Phelps Dodge Corporation at Douglas, which will close down its mine will retain a large number of its employees on the payrolls to continue work on development and construction. At least 1,000 men will be employed in this manner. The mines will not cease to operate. A schedule of underground development will be carried on and work will be continued on the new concentrator which the company is constructing above Don Luis, and operations on Sacramento Hill will be continued.

Grant H. Dowell, manager of the Copper Queen Branch of the Phelps Dodge Corporation, said that preference in the selection of the 1,000 men who will be kept at work would be given to married men. Financial assistance will be given to married employes who are affected by the closing of the smelter at Douglas. The announcement of the cessation of production of copper in a district where the mining of copper is about the only source of livelihood has met with a much more cheerful view than was anticipated. It is appreciated that the industry cannot continue producing copper when production costs are below selling prices and the view is being taken that with a suspension of production the chances of the industry being restored to normal are much better.

GOLD CALLS ON NATION FOR IMMEDIATE SUCCOR

THAT the country has lost forever the tonnage of some of its largest low-grade ore gold mines, and will suffer further unless the McFadden Bill or similar legislation is enacted at once, was the gist of addresses made at the International Mining Convention in Portland on April 8 by President W. J. Loring, of the American Mining Congress, and Fletcher Hamilton, state mineralogist of California.

"It is appalling to note that the production of gold in 1910 was $96,269,000, in 1915 $101,035,000, in 1920 $49,509,000," Mr. Loring said. "Now, then, what is going to happen if this depletion of the gold production of the United States continues? Of course, at that rate, one might say that in another ten years there would be no gold production in the United States, but that would be wrong. There will be some gold production, no matter what the conditions are, and there is no doubt that, unless something is done to stimulate the gold production of the United States, the production will drop materially below the production of 1920.

"In my opinion it is quite an unnecessary reduction if we all stand together and support a measure that will keep gold mining on the map in this country. It does not matter whether it is the McFadden bill or a measure bearing some other name, so long as its purpose is the stimulation of gold production in our country.

"The great difficulty I find is that operations which paid handsomely prior to the war will not pay expenses at the present time and the large tonnages of low grade ore that were worked at a profit before the war have had to be abandoned, and in many cases these tonnages will never be recovered because the workings have caved and no one would have the heart to go back into these old mines and reopen them under any circumstances. Unless relief is given within a very short time more of these reserves of low grade ore will be lost forever."

Mr. Hamilton told the convention the McFadden bill was the means of relief. "The McFadden bill would in no way affect our monetary system," Mr. Hamilton said. "It would give the miner a fighting chance to continue operations on more or less of an equal footing with other industries, and it would assure the maintenance of the gold standard through the renewed output of the precious metal."

"The unanimous support of men in every walk of life should be given to the McFadden bill, or some similar measure."

Mr. Hamilton also emphasized that many mines have already gone out of business, saying, "Mines which have produced millions and which should produce millions have been shut down and allowed to cave in and fill with water, and mills and reduction plants worth a king's ransom are left to the mercy of the elements." He urged his hearers to give their strongest support to the McFadden bill, not only for its passage, but for its passage immediately.

ARIZONA CHAPTER WILL HOLD ITS NEXT MEETING IN JUNE

THE NEXT regular meeting of the Arizona Chapter of the American Mining Congress will be held in Bisbee on Monday, June 13. This date was set by resolution at the last meeting.

PORTLAND CEMENT PRODUCTION LEAVES ALL RECORDS BEHIND

THE year 1920 was the best in the history of the Portland Cement industry in the United States. The Geological Survey estimates the total output at 100,302,000 barrels, and shipments at 96,329,000 barrels valued at $193,548,000. Shipments the year before amounted to 85,596,616 barrels valued at $146,656,076. The increase in production in 1920 was 24 per cent, in shipments 13 per cent, and in value 31.9 per cent.

During 1920, 115 plants manufactured Portland cement. This was 4 more than the active plants in 1919. Alabama, Indiana, New York, and Oregon each furnished an additional plant.

Importations during the year amounted to 498,036 barrels of 380 pounds each, of a value of $2.47 a barrel. Exports during the year amounted to 2,985,807 barrels of a value of $10,045,369 or $3.36 a barrel. Exports during 1920 were 522,118 barrels greater than those of the year before. March was the busiest month, when 369,640 barrels were exported, and July was the slack month, with a record of 156,713 barrels exported.

Production and shipment together with prices for the two years are shown in the following tables: (*a*)

State	Active plants		Quantity (barrels)		Percentage of increase 1920
	1919	1920	1919	1920	
California	8	8	4,642,679	6,995,000	51
Illinois	4	4	4,206,918	5,638,000	34
Indiana	5	6	7,262,454	10,700,000	47
Iowa	4	4	3,573,278	4,813,000	35
Kansas	7	7	2,927,270	4,301,000	47
Michigan	11	11	4,675,244	4,808,000	3
Missouri	5	5	5,216,347	6,039,000	16
New York	8	9	4,383,579	5,940,000	36
Ohio	5	5	1,637,418	1,790,000	9
Oklahoma	3	3	1,354,130	1,552,000	15
Pennsylvania	21	21	25,325,173	28,365,000	12
Texas	5	5	2,249,735	2,509,000	12
Utah	3	3	819,861	1,060,000	29
Washington	4	4	1,393,907	2,290,000	64
Other States (*b*)	18	20	11,101,385	13,502,000	22
	111	115	80,769,378	100,302,000	24

State	Shipments			
	1919		1920	
	Quantity (barrels)	Value	Quantity (barrels)	Value
California	4,743,336	$8,860,196	6,920,000	$15,932,000
Illinois	4,873,831	7,901,689	5,205,000	9,439,000
Indiana	7,667,976	12,527,770	10,245,000	18,910,000
Iowa	4,569,110	7,798,347	4,437,000	8,676,000
Kansas	3,023,901	5,467,284	4,165,000	7,773,000
Michigan	4,990,308	8,468,196	4,426,000	10,785,000
Missouri	5,496,164	9,264,017	5,671,000	11,231,000
New York	4,441,250	7,700,406	6,049,000	11,971,000
Ohio	1,821,597	3,311,179	1,691,000	3,724,000
Oklahoma	1,350,601	2,578,571	1,527,000	3,280,000
Pennsylvania	26,250,077	43,126,528	27,669,000	52,349,000
Texas	2,318,747	4,226,222	2,639,000	5,797,000
Utah	935,305	1,906,816	1,021,000	2,290,000
Washington	1,402,616	2,868,599	1,810,000	4,462,000
Other States (*b*)	11,711,797	20,650,256	12,854,000	26,929,000
	85,596,616	146,656,076	96,329,000	193,548,000

(*a*) Statistics for 1920 are estimates and subject to revision.
(*b*) Other States: Alabama, Colorado, Georgia, Kentucky, Maryland, Minnesota Montana, Nebraska, New Jersey, Oregon, Tennessee, Virginia, West Virginia.

OIL AND COAL SURVEYS.—David White, of the Geological Survey, has been in New York conferring with oil geologists concerning the foreign petroleum situation. An agent of the survey is making examination of drillings for oil in New Mexico. An agent is investigating coal fields of Wise and Russell counties, Virginia.

MINES FURNISH OVER TWO-THIRDS OF ALL RAILROAD TONNAGE

SHIPMENTS BY ALL LINES of industry for the last quarter of 1920 are shown in the following table, which corresponds with the Interstate Commerce Commission's analysis except that manufactured mine products are here shown separately, and percentages are also given:

Carload tonnage of class 1 railroads, Quarter ended December 31, 1920

Commodities	Short Tons	Percentage Of All Revenue Freight Carried
Products of agriculture	65,757,019	11.5
Products of animals	11,332,755	2.
Products of forests	44,653,053	8.
Raw mine products	332,377,717	58.3
Manufactured mine products	61,415,696	10.7
Other manufactured and miscellaneous products	54,259,638	9.5
Total	569,795,878	100

Shipments of raw mine products are shown in the following table:

Carload tonnage of raw mine products, quarter ended December 31, 1920

Commodity	Short Tons
Anthracite coal	34,975,840
Bituminous coal	199,290,373
Coke	11,661,238
Iron ore	34,125,126
Other ores and concentrates	5,983,851
Base bullion and matte	516,158
Clay, gravel, sand and stone	36,772,786
Crude petroleum	3,200,151
Asphaltum	874,318
Salt	1,620,325
Other products of mines	3,357,551
Total	332,377,717

Shipments of manufactured mine products are shown in the following table:

Carlot tonnage, manufactured mine products, quarter ended December 31, 1920

Commodity	Short Tons
Refined petroleum and its products	15,054,713
Iron, pig and bloom	6,709,679
Rails and fastenings	1,824,377
Bar and sheet iron, structural iron and iron pipe	14,959,407
Other metals, pig, bar and sheet	2,687,964
Castings, machinery and boilers	3,997,869
Cement	7,956,828
Brick and artifical stone	5,275,848
Lime and plaster	2,097,443
Sewer pipe and drain tile	871,568
Total	61,415,696

Even in the above segregation, full credit is not given the mines for all the revenue freight they provided. Only those articles which are manufactured entirely out of mine products are listed. Among commodities for which no credit is claimed are automobiles and trucks, agricultural implements, fertilizers and chemicals and explosives, some of which are fabricated more than 95 percent from mine products.

AMERICAN MINE PRODUCTS, raw and manufactured, provided 69 percent of all tonnage carried in carload lots by Class 1 railroads during the last quarter of 1920. These and other statistics showing the preponderating greatness of the mining industry are announced by the American Mining Congress, which bases its calculations entirely upon official government statistics.

Not only did the mines furnish the railroads more than twice as much tonnage as all other industries combined, but, what is of surpassing importance, they provided to the railroads the most economically transportable tonnage. For while in carload tonnage they furnished 69 percent of all revenue freight, yet they utilized only 53.5 percent of all cars actually used in carrying revenue tonnage in carload lots. The industry which furnishes more than two-thirds of all railroad tonnage uses slightly more than half of the car supply—an economy which every business man will readily appreciate.

Shipments of raw mine products amounted to 58.3 percent of all railroad car-lot tonnage and of manufactured mine products to 10.7 percent. Manufactured mine products alone were greater in tonnage than all other manufactured products combined and only four-fifths of one percent less than shipments of all agricultural products.

Excluding all shipments of bituminous coal, the mining industry still provided in its raw materials twice as much tonnage as agriculture, two and one-half times as much as non-mining manufactures and miscellaneous commodities, three times as much as forestry and approximately twelve times as much as the animal industry.

WORLD'S COAL PRODUCTION IN 1920

APPROXIMATELY 1,300,000,000 metric tons of coal were produced in the world in 1920, according to calculations of the United States Geological Survey. This was a great increase over production of 1919, but was 42,000,000 tons less than that of 1913, the last pre-war year. A metric ton is approximately 2240 pounds.

Taking production of 1913 as the normal basis, that of 1920 was 97 percent; that of 1919, 86 percent; that of 1918, 99 percent, and that of 1917, 100 percent.

The following table shows world production and the percentage of output produced by the United States during the last ten years:

World's Production Of Coal, 1920
(Metric Tons)

Year	Production in part estimated	Per cent produced by United States
1910	1,160,000,000	39.2
1911	1,189,000,000	37.9
1912	1,249,000,000	38.8
1913	1,342,000,000	38.5
1914	1,205,000,000	38.6
1915	1,196,000,000	40.4
1916	1,296,000,000	41.1
1917	1,345,000,000	44.0
1918	1,331,000,000	46.2
1919	1,158,000,000	42.9
1920	1,300,000,000	45.1

CAN LIGNITE SUPPLANT COAL IN NORTHWESTERN STATES?

THE EXTENT to which carbonized lignite may find a market in the Dakotas, Minnesota, and contiguous states is to be determined by an investigation by Dr. Erich H. Zimmerman, professor of commerce of the James Millikin University, Decatur, Illinois. Dr. Zimmerman has been detailed by the United States Bureau of Mines.

The Sixty-sixth Congress appropriated $100,000 for investigating possibilities of increased utilization of northwestern lignites. W. W. Odell, fuel engineer of the Bureau of Mines, was recently sent to Montreal and Ottawa to secure an exchange of information with the Canadian government relative to the technical problems involved in the carbonization of lignite. The Bureau of Mines has become convinced that northwestern lignites can be converted into high-grade smokeless fuel, and that the process of conversion will yield considerable quantities of gas and oil as by-products. It now remains only to consider the economic questions involved, the principal one of which is whether carbonized lignite can compete with coals from the central Mississippi and Ohio Valleys which are now shipped into the northwest.

One important element in favor of the commercial utilization of lignite is that it is found in parts of the country which have no other solid fuel. National coal resources of all kinds aggregate 3,553,637,100,000 minable tons, of which nearly one-third is lignite. Of the lignite, approximately 964,424,000,000 tons lies in North and South Dakota and northwestern Montana, 23,000,000,000 tons in Texas, and 7,404,300,000 tons in Alaska.

Since there is no experimental plant for treating lignite by-products, it is probable that investigative work will be conducted at some of the Bureau of Mines general experiment stations. The moisture content makes lignite unsuitable as fuel in its natural state. Coal is shipped into the lignite country from great distances, and the results are high prices for both industrial and domestic fuel, the tying up of transportation facilities needed for other services, the suffering of a handicap in the industrial development of the northwest, and general economic loss. More than 2,000,000 tons of bituminous and 1,500,000 tons of anthracite is shipped annually a distance of 1,000 miles from Illinois, Indiana, West Virginia, Kentucky, and Pennsylvania into the states of North Dakota, South Dakota and western Minnesota. An average of 400 miles would be all that is required in shipping briquetted lignite.

Dr. Zimmerman is considered eminently well equipped for making these important investigations. He holds several degrees from American and European universities, is the author of numerous books upon foreign trade and shipping subjects, and has made a special study of the relation of coal exports to shipping. He expects to complete his report by July 1.

MARCH ANTHRACITE SHIPMENTS. — Mild weather during the month and the winter preceding and the hope of consumers that price declines were imminent caused shipments of anthracite during March to fall to 5,737,771 gross tons, as compared with 5,966,101 tons in February and 6,077,821 tons during March of 1920. Total shipments for the first three months of the calendar year were 69,366,731 tons, as compared with 69,815,034 during the parallel period of last year. The decrease of 448,303 tons is small, mild weather considered. Figures computed by the Anthracite Bureau of Information, Philadelphia.

CONVENTION OF THE NATIONAL COAL ASSOCIATION

ONE OF THE MOST IMPORTANT conventions in the history of the National Coal Association, representing the bituminous coal operators throughout the country, will be held on May 19, 20 and 21 at the Waldorf-Astoria, New York. Judging from present indications a large proportion of the 2300 members of the association will attend.

Although the program for the convention is not yet complete, enough has already been arranged to give a glimpse of the real interest it will hold for the industry. Aside from the business to be taken up, there will be addresses by men prominent in public life who will touch upon matters pertaining to coal and business in general.

Among the matters to be discussed will be the part played by trade associations in the work of after-war reconstruction. The relation of trade associations to the government in its efforts to restore business to "normalcy" will be taken up.

The business outlook of the nation will be gone into in addresses before the convention.

Transportation readjustment as one of the essentials in the immediate future development of business will be discussed. The dependency of the coal industry upon adequate railroad transportation the year around will form a part of this theme.

The convention will open at ten o'clock on Thursday, May 19, and there will be morning and afternoon sessions on that day and Friday, the convention ending with a morning session on Saturday. At the business sessions new officers will be elected and there will be reports covering the activities of the association for the last year.

CONVENTION OF AMERICAN WHOLESALE COAL ASSOCIATION

THE AMERICAN WHOLESALE Coal Association will hold its annual convention at Washington on June 7 and 8 at the Washington Hotel. The final program is being arranged. Considerable interest has been aroused among the wholesalers of the country, and it is believed that the attendance at the Washington meeting will be the largest on record.

COAL ASSOCIATION OFFICERS RESIST EXTRADITION

SUIT WAS FILED on April 7 by J. D. A. Morrow, Vice-President of the National Coal Association, in the Supreme Court of the District of Columbia against John E. Laskey, U. S. District Attorney for the District of Columbia, and the Attorney General of the United States and various federal officers in Indiana, Illinois, Pennsylvania, and Delaware, for an order restraining them from bringing about his removal to Indiana to answer a charge of violation of the Sherman Law. Hearing on the petition was set for April 25.

The gist of the charge against the National Coal Association and against Mr. Morrow related to the restriction of production of coal. The answer is that the National Coal Association conducted its activities during the war with full cognizance of the government and for purely patriotic purposes. The additional allegation is made that on purely constitutional grounds, the Indiana Court has no authority to require Mr. Morrow to go to Indianapolis. It is also charged that some of the federal officials are deliberately attempting to destroy the bituminous coal industry.

Location of Bureau of Mines Field Stations

(Prepared for the Mining Congress Journal)

Bureau of Mines Experiment Stations

NAME	LOCATION	WORK
Petroleum	Bartlesville, Okla.	Oil.
Pacific	Berkeley, Cal.	Chemicals; magnesite; miscellaneous.
Ceramic	Columbus, Ohio	Ceramics.
Alaska	Fairbanks, Alaska	Development of resources of Alaska.
North Central	Minneapolis, Minn.	Utilization of low-grade iron ores.
Pittsburgh	Pittsburgh, Pa	Mining, largely coal; electro-metallurgy.
Rare and Precious Metals	Reno, Nev.	Rare and precious metals.
Northwest	Seattle, Wash	Ceramics; coal washing; electro-metallurgy.
Inter-Mountain	Salt Lake City, Utah	Low-grade lead and zinc ores.
Southwest	Tucson, Ariz	Low-grade copper ores.
Central District	Urbana, Ill	Coal.
Southern	Birmingham, Ala.	Iron and steel; coke; coal; by-products, non-metallics.
Mississippi Valley	St. Louis, Mo	Lead and zinc.

The above drawing, prepared for The Mining Congress Journal, shows the location of all stations and field offices of the United States Bureau of Mines, about forty in number. It will be noted that there are five classes of field offices, and that a different symbol is used for each.

In its organization of mine rescue and first aid work, the Bureau of Mines has divided the United States into nine districts. District "A" consists of Pennsylvania, New York, New Jersey, and the New England states, headquarters of the mine rescue car and mine safety station being at Pittsburgh, Pa. District "B", consisting of Ohio, Kentucky, Virginia, West Virginia, Maryland and Delaware, has its mine safety station at Norton, Va., and mine safety car at Huntington, West Virginia. District "C" consists of Louisiana, Tennessee, North Carolina, South Carolina, Alabama, Georgia and Florida. Mine safety stations in this district are located at Birmingham, Ala., and Knoxville, Tenn.

District "D" consists of Indiana, Illinois, Iowa and a portion of Michigan. Mine safety stations are located at Vincennes and Evansville, Ind., and mine safety cars at Des Moines, Iowa, and Terre Haute, Ind. District "E", comprising North and South Dakota, Minnesota, Wisconsin and a portion of Michigan, is served by a mine safety car stationed at Ironwood, Mich. District "F", consisting of Nebraska, Kansas, Missouri, Arkansas, Oklahoma and Texas has a mine safety station at McAlester, Okla., and a mine safety car at Pittsburg, Kansas.

For District "G", consisting of Colorado, New Mexico and Arizona, there is a mine safety car located at Raton, New Mexico. District "H", consisting of Montana, Washington, Idaho, Wyoming and Utah, has mine safety cars at Butte, Montana, and Rock Springs, Wyoming, and a mine safety station at Seattle, Wash. District "I", composed of Oregon, California and Nevada, has a mine safety station at Berkeley, Cal., and a mine safety car at Reno, Nevada.

Among the field offices of the Bureau of Mines are those at Bakersfield, Cal.; Winnett, Montana; Casper, Wyoming; and Shreveport, Louisiana, which are devoted to supervision of production of oil on the public domain, as provided for under the recent oil-leasing act. Field headquarters for supervision of mineral leases are at Denver, Colorado. Other field offices of the Bureau are located at Ithaca, New York; Chicago, Illinois; Tuscaloosa, Alabama; Dallas, Texas; Houghton, Michigan; Boulder, Colorado; Moscow, Idaho; and San Francisco.

SUCCESS OF MINE SAFETY WORK DUE TO CO-OPERATION

RESULTS of mine rescue and first aid training given by the Bureau of Mines, as exemplified especially in the co-operation between mine owners, mine managers and mine workers during the last decade, are discussed in an interview prepared for general publication by Dr. H. Foster Bain, director of the bureau.

During the decade that ended June 30, 1920, the Bureau of Mines trained 50,971 persons in mine-rescue and first-aid methods. In Pennsylvania, the banner coal-producing state, 9,111 persons have been trained. Colorado, with 2,921 persons trained, is the second state in this respect. In Montana, 2,740 persons have been given training; in West Virginia, 2,713; in Michigan, 2,620; in Kentucky, 2,447; in Arizona, 2,147; in Alabama, 2,097. The state of Washington, with 1,784 persons trained in relation to an average number of 6,035 miners employed, has a rate of 295.56 persons trained per one thousand employed, the best record of any mining state.

The Bureau of Mines has at present ten specially equipped Pullman cars engaged in transporting its training crews from mine to mine. There are ten mine-rescue stations established: at Pittsburgh, Pa.; Wilkes-Barre, Pa.; Vincennes, Ind.; Norton, Va.; Knoxville, Tenn.; Evansville, Ind.; Birmingham, Ala.; Berkeley, Cal.; McAlester, Okla., and Seattle, Wash. In addition to training miners in first-aid and rescue methods, the crews of the cars and stations give first-aid training to wives and children of miners, so that the bureau's efforts for health and safety go directly into the home. The statistics show a steady reduction in the accident rate as the training work progresses.

"Ten years ago," said Dr. Bain, "there was no general, country-wide service for systematic training of miners in matters relating to safety. A beginning only had been made at a few scattered points. Under the old conditions each man was left largely to look out for himself in meeting the hazards of his day's work, and the foreman, shift-bosses and superintendents chiefly relied upon improvision when major accidents occurred. So long as the mines were small and the workers highly intelligent and well trained in routine mining methods, and when, too, the pressure for output had not yet speeded up industry to the extent it has since those days, there was something to be said for this *laissez faire* attitude. When, however, the rapid expansion of industry led to the introduction of new and little trained labor and to units of production of greatly increased size, the natural dangers of mining were greatly intensified. An accident in a small mine affects but a few; the same accident in a large mine, unless proper precautions have been taken, may cost the lives of many. The public does not generally recognize that the greatly increased output of the mines, of coal mines in particular, of recent years, has been obtained from substantially the same number of miners as ten years ago, but with a personnel not nearly so well trained in mining. It is inevitable under such conditions that more care must be devoted to avoiding accidents and much more elaborate preparations made for meeting them. In the years immediately preceding the establishment of the Bureau of Mines, this speeding up of industry, change in the character of mine labor, and increasing hazard had all begun to be felt.

"Immediately prior to the organization of the Bureau of Mines, public attention had been drawn to a series of disastrous coal-mine explosions, to the increasing frequency of these disasters, and to the terrible loss of human life resulting therefrom. One of the first problems, therefore, confronting the bureau was clearly that of finding methods of reducing the number of such disasters and lessening the severity of those that continued to occur. Toward this object were immediately directed the energies not only of the Bureau of Mines but also those of state mine inspectors, mine operators and various other agencies, all of whom were urged to co-operate in this great humanitarian work. The results of this work naturally cannot be measured by figures only. Work for increasing the health, safety, comfort, and happiness of human beings may not be gauged with mathematical precision.

"No service rendered by the Bureau of Mines affects more directly and vitally the well-being of the miners in this country and the comfort and happiness of their families than the training the bureau gives them in mine rescue and first aid methods. In this great, country-wide work the bureau has been fortunate in obtaining the aid and co-operation alike of the miner, the mine operator, the state mine official, and the general public.

"The miner has shown his knowledge of the need of the work for safety by voluntarily applying for the training given through the bureau's safety stations and cars; by using permissible explosives for mining coal in gaseous and dusty mines instead of more dangerous black powder and dynamite; by being careful at all times, and by attending and participating in first aid and safety meetings and contests.

"The operator is introducing safer mining methods, and is recognizing the need of adequate ventilation and of effective control of the dust menace in coal mines, as well as the need of constant examination of mine air for the presence of explosive gas and harmful dust. In addition, the operator has stimulated and maintained interest in first aid and rescue work by encouraging the holding of meets and rallies, by posting safety bulletins at mines, and by adopting the suggestions of his employes and the facilities afforded by the various safety organizations for the elimination of dangerous conditions or practices. How wide this movement for greater safety has become is shown by the volume of the business now done by concerns dealing in mine safety appliances and supplies.

"Public interest in mine safety is shown by the adoption of new mining codes or the revision of old ones by state legislatures, by provision for state mine inspection systems, and by the enactment of laws providing for the relief of the victims of accidents or their dependents. These compensation laws generally recognize the value of first aid and rescue training by making the charges for compensation insurance lower to those mining companies that provide for the maintenance of such training.

"Of outstanding significance is the fact that all these efforts for greater safety have involved active co-operation between the miner and the operator. The miners have their organizations, the operators their associations, both formed for the furtherance of definite economic ends; but the task of making conditions safer and of lessening death and disability from accident at a particular mine necessarily involves the earnest co-operation of the miner, the mine management, and the mine owner."

HERBERT HOOVER resigned as President of the Federated American Engineers Society on April 16. He gave as his reason the fact that the council was engaged in furthering national activities involving legislation, and that he could not consistently direct these activities and serve at the same time as a member of the Cabinet

WHAT THE ALASKA MINING EXPERIMENT STATION IS DOING

AN INTERESTING REPORT on the work of the Alaska station of the United States Bureau of Mines has been prepared by John A. Davis, superintendent. The station at the present time is conducting investigations mainly along two lines, the recovery of gold from black sands and the study of milling methods. These experiments have caused a great deal of interest among Alaska placer miners who have been enabled thereby to effect a saving of gold in their mining operations.

Ordinarily the Bureau of Mines does no ore-testing work for the benefit of private companies or individuals. However, such work is done by the bureau where there are no private agencies sufficiently equipped and where the work required is of sufficient public interest to justify governmental expenditures. This condition prevails in Alaska. While the station has not developed any process new to the metallugical industry, it has, by the application of methods used elsewhere, devised means of treating ore which cannot be treated profitably by methods ordinarily employed in the district. Mr. Davis makes the statement that while the results in some investigations by the Alaska station have been negative from a metallurgical point of view on account of the low grade of ore and high cost of machinery, fuel, and labor, they have been of positive benefit in preventing the erection of concentrating plants which would have been unsuccessful.

The station is also making qualitative determinations and assays for prospectors and mining men. This part of the work has been especially favorably commented upon. The station is also making fuel investigations, and in this connection is looking into the feasibility of using lignite in a central plant for the generation of electricity to be transmitted to the metal mining districts.

ALASKA COAL REGULATIONS ISSUED BY GENERAL LAND OFFICE

REGULATIONS governing coal prospecting in Alaska have been issued by the General Land Office. Issuance was made necessary by the act of March 4, 1921, amending the act of October 20, 1914.

Prospecting permits may cover 2,560 acres for four years, and will be issued where exploratory work is necessary to determine the existence or workability of coal deposits in any unclaimed or undeveloped area. Permits can be issued only to citizens of the United States, associations of citizens, or to corporations a majority of whose stock is owned and held by citizens.

PRESIDENT'S ALASKA VISIT

PRESIDENT HARDING considers that Alaska has infinite possibilities and is deeply interested in the development of the territory. He contemplates a visit to Alaska between the adjournment of the extra session and the convening of the regular session next December, and will make the trip in company with Secretary of Interior Fall. The President thinks it is necessary for government officials to be personally familiar with the territory and its conditions in order to intelligently take administrative steps or recommend legislative action for its benefit. It has recently been learned that the President planned a trip to Alaska last year, but had to abandon the idea when he was nominated for the presidency.

MICA IN 1919

MICA PRODUCED and sold in the United States in 1919 amounted to 4,031 short tons, valued at $541,651. Of this quantity 1,545,709 pounds valued at $483,567 was sheet mica, the remainder being scrap. There was a decrease of 6 percent in quantity of sheet mica and of 34 percent in value as compared with 1918, but an increase of 42 percent in the quantity of scrap mica as compared with 1918.

Ninety percent of sheet mica consumed in the United States is used for electric insulation. Films of the substance are used in condensers for magnetos and wireless apparatus, and sheets, tubes, and washers of mica are used in dynamos and other electric appliances. Mica is also used as a glazing material in stove doors, furnace peep-holes, divers' helmets, and in other places where transparency under heat is required. Ground mica is used to give luster and brightness to wall-paper, as a lubricant, an insulator, and a filler in paints and tiles and concrete to imitate the texture of granite, as imitation snow on Christmas trees, to prevent hot-boxes on railroad cars, as a preservative and filler of rubber goods, in printing calico, in annealing steel, in making certain roofing materials, and as an absorbent of nitro-glycerine in the manufacture of mica powder, as well as in many other ways.

Mica produced and sold in 1919 came from the following states, arranged in the order of the quantity of sheet mica sold: North Carolina, New Hampshire, Virginia, Georgia, West Virginia, and Alabama. Small quantities of scrap were reported sold from South Dakota and Colorado, but no sheet mica.

Production during the last reported decade was as follows:

Mica Produced and Sold in the United States, 1910–1919.

Year.	Sheet mica.		Scrap mica.		Total quantity (short tons).	Total value.
	Quantity (pounds).	Value.	Quantity (short tons).	Value.		
1910	2,476,190	$283,832	4,065	$53,265	5,303	$337,097
1911	1,887,201	310,254	3,512	45,550	4,456	355,804
1912	845,483	282,823	3,226	49,073	3,649	331,896
1913	1,700,677	353,517	5,322	82,543	6,172	436,060
1914	556,933	278,540	3,730	51,416	4.008	329,956
1915	553,821	378,259	3,959	50,510	4,236	428,769
1916	865,863	524,485	4,433	69,906	4,866	594,391
1917	1,276,533	753,874	3,429	52,908	4,067	806,782
1918	1,644,200	731,810	2,292	33,130	3,114	764,940
1919	1,545,709	483,567	3,258	58,084	4,031	541,651

GYPSUM DEPOSITS

GYPSUM DEPOSITS in the United States are described in a bulletin just issued by the Geological Survey. Gypsum is the rock used for making plaster of paris and hard wall plaster, and is also an ingredient of Portland cement. It likewise is used as a fertilizer. The bulletin shows that gypsum is distributed from New York to California and from Michigan to Texas. The deposits in some states are so small that they may be worked out in a few years; those in other states, like Wyoming and New Mexico, consist of thick beds that crop out at the surface for hundreds of miles and that are seemingly inexhaustible.

INCREASED COST OF RAILROAD FUEL NEARLY 300 MILLION DOLLARS

By C. H. Farrell

IN COMPLIANCE with a Senate resolution the Interstate Commerce Commission has recently made public a somewhat detailed report containing many statistics and showing the increased cost of railroad fuel during 1920 compared with the year 1919. The total increase in the cost to the railroads, delivered, of all kinds of fuel, including bituminous and anthracite coal, coke, fuel, oil, hard wood and soft wood, was $296,085,835, or almost as much as the carriers claim they will be able to save through the abrogation of the National Agreements with the brotherhoods. It must be borne in mind, however, that while this increase is quite large, nevertheless the amount of fuel used also increased quite substantially, there being purchased 31,436,127 net tons of bituminous coal more than in the previous year. The increase in anthracite coal was 983,466 net tons; in fuel oil, 12,629,377 barrels; in coke, 18,342 net tons; in hard wood, 21,860 cords; in soft wood, 18,961 cords; and in other fuel, 13,841 net tons.

The average increase per net ton in bituminous coal was 98 cents, in anthracite coal 73 cents, in fuel oil 33 cents a barrel, in coke $3.94 per net ton, in hard wood 46 cents per cord, in soft wood 63 cents per cord, and on other fuel 76 cents per net ton.

The commission's report contains tables going into the details by regions, as well as individual roads, and practically all large carriers are included, a few of the smaller ones having been omitted, which omissions would not affect the results to any great extent, and a few other roads operating a total mileage of 1,032 miles having been delinquent in making reports to the commission.

On bituminous coal the figures are shown both for contract coal and spot coal, there having been 17,960,540 tons more bought on contract purchases than in the previous year and on spot purchases 13,475,587 net tons more.

The situation in New England differs quite noticeably from that throughout the rest of the United States, the increase there in the delivered cost for bituminous coal having been $2.92 per net ton and at the mine $1.27 per net ton for contract coal and $3.79 for spot coal.

GENERAL SITUATION.—With the convening of Congress the transportation problem will undoubtedly be given a very thorough overhauling. The President in his message referred to the necessity of reducing rates. Senator Cummins has introduced a resolution requiring a general investigation of the whole problem. The National Agreements, so bitterly opposed by the carriers, have already been abrogated by the Railroad Labor Board, effective July 1, and the various organizations and individuals interested in transportation are forming their plans to urge upon Congress amendments to the recent Transportation Act which will make possible a solution of the labor controversy, a reduction in the expenses of the carriers, a lower basis of rates and a general return to normal conditions on the railroads of this country. The present administration has shown indications of going about these problems in a businesslike way and with a real conception of just what the troubles are. But it is not probable that there will be any legislation affecting railroads before late summer because the tariff and revenue measures are being insisted upon from many sources and have already been placed first on the program of Congress. Meanwhile, the shipper will probable have to continue to pay the high rates and hope that the railroad managers, now that they have been given opportunity by the Railroad Labor Board, will get together with their employees and effect some sort of an arrangement that will make it possible to eliminate the iniquities of the National Agreement and at the same time give the men who do the work a fair, reasonable wage, for which those men will be expected to do a fair, reasonable day's work. It seems apparent to the onlooker that great savings can be made without working any real injury to anyone, and if the carriers and employees will cooperate we should have, beginning with July 1, a return to normal conditions which will make possible a reduction in the abnormally high rates now being paid by the shipper.

If one studies the tonnage and revenue figures of the last few months he cannot escape the conclusion that the present basis of rates not only does not give the carriers what they expected but actually deprives them of much revenue which they undoubtedly would get if the rates were not prohibitive. When a farmer, a manufacturer or shipper of any kind finds that his goods will not bring in the market what it costs him to transport those goods, then he is forced to discontinue his shipments, and it is quite evident in many instances that the rates today absolutely prohibit the shipment of numerous commodities

The last reports available, which are for the week ended April 8, show that there were 507,427 idle cars on the railroads, and this figure is approximately 21 percent of the total number of freight cars owned by all the railroads in this country. This is an increase of over 11,000 cars as compared with the previous week, and an increase of 240,000 since the first of the year. More than half, or 261,294 of these cars, were coal cars, and this is the largest number of idle cars ever reported by the carriers. For the week ended March 31 there 495,904 surplus cars, and that was also a record, and more than half of this surplus were coal cars, there having been a steady decline for some weeks in the number of cars loaded with coal. For the week ended March 23 the surplus was 459, 411, and this is also a record.

REVENUE FREIGHT LOADED.—Owing to the number of cars loaded with revenue freight we find a similar situation. The last report is for the week ended April 2, which shows that there were 21,210 cars less loaded with revenue freight than in the previous week. For the week ended on March 26 the decline under the previous week was 3,855, and for the week ended

March 19 the decline was 10,361 and for the week ended March 12 it was 10,814. These figures show quite clearly that although tonnage was at a very low level it continued to decrease, and that the carriers cannot hope to operate successfully unless we can get a steadier movement of all classes of freight, because the decline is shown in nearly all freight. Merchandise and miscellaneous commodities is the only class of traffic to hold its own, but even this class began to fall in the early part of April and at that time all commodities were showing a decline. Coal has shown the greatest falling off and it brings us to the realization that in a few months we will again be facing a coal shortage, because unless the carriers move during the summer months a large amount of coal, it will be offered for transportation in the fall and early winter, and instead of idle cars we will again face a shortage.

EARNINGS.—The complete reports for January show that the carriers suffered a deficit of $1,167,800, while 109 out of 202 railroads reporting failed to earn their expenses and taxes compared with 88 in December. In February this deficit increased to $7,205,000, with 106 out of the 200 roads reporting failing to earn their expenses and taxes. Taking the January figures we find that the roads failed by $68,439,800, or approximately 102 percent, to earn the amount which they expected under the increased rates. In February this shortage was $63,804,000. The total operating revenues in January increased 5 1/5 percent over those in January, 1920, and operating expenses increased 6 3/5 percent, while the net railway operating income showed a decrease of 120.6 percent under that for January, 1920. In February operating revenues showed a decrease of 4½ percent compared with the same month in 1920. Operating expenses decreased 7½ percent and the net railway operating deficit was reduced 56½ percent compared with February, 1920, at which time there was a deficit of $16,561,000. For the six months since the government guaranty to the railroads ceased and the carriers have been getting the benefit of the increased rates the net operating income has been at an annual rate of return of 2½ percent on their tentative valuation fixed by the commission. During the first four months of this period the annual rate of return was 3.3 percent.

This falling off in earnings is reflected in all districts, being greatest in the east and lowest in the west.

DISTRIBUTION OF CARS.—The commission has instituted an investigation into and concerning the reasonableness and propriety of the present car distribution rules in so far as they apply to privately owned coal cars and cars furnished for railroad fuel coal, with a view to prescribing just and reasonable rules and regulations. In connection with this same investigation the service orders issued by the commission governing the transportation of coal have all been withdrawn and the carriers are now working under their own rules which were in effect when the roads were returned to private ownership something over a year ago. It is the purpose of the commission to go into the whole subject and draw up for adoption by the railroads whatever rules are found necessary, and any shipper who is interested will have an opportunity to be heard before any definite decision is reached.

FREIGHT COMMODITY STATISTICS.—For the quarter ended December 31, 1920, we find that Class I railroads in the United States originated 9,981,908 carloads of revenue freight and carried 16,520,748 carloads. The number of tons of 2,000 pounds originated was 657,824,294, and the number of tons carried was 1,179,285,738. Under the heading of "Products of Mines" we find that this class of freight was responsible for 4,010,562 of the carloads originated, or not quite half of the total number, while 6,942,123 carloads of revenue freight handled was credited to the products of mines. The mining interests were responsible for 193,413,417 tons of the revenue freight originated and 332,377,717 tons of the revenue freight carried.

ONE REASON WHY MINES CLOSE

THIS is the heading of a brief editorial in the *Oatman Mining News*. That the heading is appropriate will be conceded by anyone who reads the article, which is as follows:

"A man in the southern part of the state who happens to be in the lumber business gave one good, big reason why the copper mines are closing. Note the figures what a carload of lumber cost in Oregon and what it cost laid down in Arizona. Timber cost at the mill in Oregon, $187.40; freight, $865.40; war tax, $25.96. Did you ever hear of anything more eloquent than the above figures? High freight rates, high passenger rates, and high railroad wages is strangling business. There is no chance of escape; nothing to do but quit, until the men that own the roads and the men that run the roads come to their senses. They are blocking the nation on its road to recovery. There will be no real prosperity until the railroads carry freight and passengers at a fair rate."

MINE RESCUE CAR ITINERARIES

ITINERARIES of mine rescue cars are as follows:

Car No. 4: Scofield, Utah, April 28 to May 7; Winterquarters, Utah, May 9 to May 14; Clear Creek, Utah, May 16 to May 21; Castlegate, Utah, May 23 to June 4; Cameron, Utah, June 6 to June 11.

Car No. 10: Hancock, Michigan, Quincy Mine, May 2 to May 7; Mason, Michigan, Quincy Mill, May 9 to May 14; Mohawk, Michigan, Mohawk Mine, May 16 to May 21; Gay, Michigan, Wolverine Mill, May 23 to May 28; Houghton, Michigan, Michigan College of Mines, May 30 to June 11.

CANADIAN MINERS ALSO SUFFER FROM HIGH FREIGHTS

AMERICAN RAILROADS are not the only ones to find freight rates can be boosted so high as to curtail shipments. Likewise, American operators are not the only ones who complain against the imposition of tariffs which make mining unprofitable. The situation in the United States has its counterpart in Canada, as seen in the comment of the *Mining & Engineering Record*, (Vancouver, B. C.):

"The Railway Commission of Canada has proved itself one of the worst enemies of the Dominion, and the Commissioners should be individually impeached and held accountable for the mischief they have done the country in the past few months. By their haste to imitate the United States railway policy in raising the railway rates they killed the lumber business, shut down the mills, and threw out of work thousands of mill hands and loggers; while they stopped the shipping of ore over the railways to distant points and closed down a number of mines, throwing out of work a large number of men engaged in that industry also. The Railway Commission has thus inaugurated a policy which has had a most mischievous effect on the trade, industry and wealth production of Canada. No labor strike has ever done anything like the same amount of mischief. Now the railways are in turn crying out that their business has gone to pieces and thousands of railway employes have been laid off, so the Railway Commission has even wrecked the business entrusted to its care. Not satisfied with this folly it has now authorized an increase of express rates which will be attended with proportionately bad results. This is a time when prices of commodities are falling, and railway services, wages, and all costs entering into production must be brought down if this country is to prosper and maintain its place in trade and commerce."

OIL AND GAS PERMITS

THE FOLLOWING permits to prospect for oil and gas have been issued by the General Land Office: (Figures refer to acreage.)

Alaska. Juneau District: Carl E. Martin, 2560; L. D. Ellison, 2560; Wm. C. Hunt, 2560; M. J. Conroy, 2560; John Miller, 2560, Wm. Munay, 2560; Wm. A. Bigelow, 320; W. H. Rager, 2560; K. C. Schuyler, 640; Geo. C. Henderson, 2560; Warren Palmer, 2560; Cam Campbell, 800; R. H. Elder, 2560; Tony McGowan, 2560; Rosalie M. Donahue, 2560; James Hodnett, 2560; Fred. L. Nehf, 2560.

Arizona. Phoenix District: Isham Chastian, 2560; John R. Loomis et al, 2379; Chas. M. Connor, 640; T. H. Gracey, 2560; Sims Ely, 1280; J. R. Smart, 1280; Jerome Adamana Oil Association, 1279; Wm. A. Moore, 1280; W. T. O'Connell, 2560; J. E. Tompkins, 1268; Caroline Keith, 640; W. R. Coates, 541; Irene E. Robinson, 640; John W. Cairns, 2560; Wm. A. E. Hult, 2560.

California. El Centro District: Loyd Phelps, 320; C. L. Gillet, 2560; Joe Jardin, 2560; Wm. L. Hubner, 639; Legion Oil Co., 480; Herman L. Welch et al, 2560; J. E. Armstrong, 2560; Oil & Drilling Co., 2505; Geo. C. Harbolt et al, 2560; M. C. Plaschard, 2560; Austin S. Taylor et al, 2560; J. St. Paul White, 320; Waltham O. Ramage, 2560; Eli P. Williams, 2560; Lewis H. Francisco, 2560; Otto J. Prundy et al, 2553; Ross T. Hichcox et al, 329; Erwin J. DelPorte, 1153; Clarence E. Smith, 2562; Edward Schoeppe, 1280; C. D. Hartshon, 2560; J. P. Walsh, 1600; Ramer O. Kendall, 2560; Mortimer Coyle, 2560; Jas. T. Coyle, 2560; Janet A. McGahan, 640; Oella B. Lewis, 2579; Robt. Hays, 2560; C. L. Gillett, 2560; David Godfrey, 2547; Albert B. Bowden, 960; Henry J. Levy et al, 1910; C. L. Gillett, 2560; Fred Briggs, 2560; Lorin Case, et al 2560; C. F. Kann, 2538.

Independence District: Wm. Cleveland,

2560; Wm. Voelker, 2539; Albert F. Lange, 2557; J. B. McLees, 1900; C. J. Coleins, 2560; E. V. Carley, 2560; Moses H. Bixby, 2562; H. H. Hancock, 2560; Jas. C. Buyers, 2540; S. L. Wilson, 2492; Catrienne Gymen, 2554; A. C. Reed, 1920; Jas. W. Means, 1920; Jas. A. McCall, 2514; Jas. A. McCall, 2560; F. M. Berger, 2560; Arlton L. Stevenson, 2559; Thos. F. King, 2560; Alice G. Ford, 2538; V. N. Reed, 2515; Fred A. Lydy, 2563; H. H. Waugh, 1920; Chas. H. Farrow, 2540; Ben Weingart, 1920; Harry Lindsey, 2560; Ella C. Nelson, 2560; Wm. S. McCall, 2560; Thos. Cooke, 2560; F. M. O'Connor, 2560; Geo. J. Schaffer, 2548.

Los Angeles District: Chas. A. Anderson, 720; Cajon Basin Oil & Gas Co., 2514; Margaret M. Chambers, 160; Noah Adair, 2075; O. F. Scott, 2400; Painted Hill Oil Assn., 2380; Israel Weislity, 1600;

San Francisco District: Belridge Oil Co., 2101; John B. Jaqua et al, 2554; Henry Malson, et al, 2560; Frank J. Carr, 920; A. L. Sage, 2240.

Visalia District: Chas. C. Lamberson, 80; Gustave Linderman, 160; Joe H. Bendict, 480; Earl H. Daggett, 400; Belridge Oil Co., 2101; Devils Den Con. Oil Co., 80; John Sloan, 320; Rudolph, Pollak, 360; John Z. Benedict, 160; Harry Lindeman, 160; E. L. Blanck, 480; Ernest Reingpack, 160; Isadore Newman, 160; Wm. C. VanAntwerp, 80; Thos. C. Scott, Jr., 240; Geo. Eamhart, 160; T. J. Sans Souci, 640; Jos. Baumgartner, 240; Chas. E. Manley, 160; Fannie Higgins, 160; Ivey Young, 160; Eva C. Slover, 528; Sol A. Rehart, 1691; Saml. Sanborn, 1280; Grove T. Vail, 80; James W. Skagg, 1440; Geo. F. LaDam, 160; Don C. Aldridge, 641; Javed How, 408; Samuel H. Hain, 1222; Jeramiah P. Eaton, 320; Robt. G. Lauer, 440; A. K. P. Hannon, Jr., 1120.

Colorado. Glennwood Spgs. District: Robt. G. Stovall, 2560; Donald C. Bromfield, 1442. Montrose District: Robt. A. Ross, 1440; Inland Oil & Refining Co., 2480;

Idaho. Haily District: Lester M. Campbell, 1080; Perrie E. Papineau, 80; H. P. Schofield, 320; Columbus E. Jenkins, 320; Earl E. & Frank A. Peterson, 240; Chas. H. Upton, 2090; Clyde M. Hardy, 2550. Boise District: E. V. Barg, 2560; Joel Potter, 2174.

Mississippi. Jackson District: John Seabon Hinton, 890.

Montana. Bozeman District: Arthur E. Edgeton, 310; Chas. W. Nay et al, 320.

Glasgow District: South M. West, 319; Saml. E. Bumley, 2561; Bertha Nelson, 646; Clarence C. Calhoun, 240; Wm. A. Armstrong, 2912; Samuel H. Burnley, 2560;

Great Falls District: Walter S. Myers, 2240; Christine A. Villars, 2280; Jeannette Wilmer, 1280; Jas. H. Mills, 343; Leta Neat, 190; Louis O. Hogue, 881; Walter S. Lugden, 240; Alice Fremingh, 220.

Hailey District: Raft River Oil & Gas Co., 2560.

Havre Dist: John F. Foster.

Lewistown District: Henry O. Hilton, 1720; K. R. Rorabeck, 640; Alice Rino, 160; Loren Oldham, 120; Roy W. Winston, 2440; Evers Oil Co., 800; Chas. F. Williams, 320; Frank Coleman, 945; Arthur L. Chapman, 1240; Henry L. Tierney, 160; John Berkin, 1560; Harrison B. Martin, 440; John M. Howland, 40; Chas. A. Haddath, 234; Thowald Wygaard, 400; Joseph A. Jones, 833;

Miles City District: Clyde E. Waddingham et al, 2555; Chas. A. Westphal, 2549; Miriam O. Meyerhoff et al, 2557; Ernest Cornell, 800; Harry J. Huene, 2226; Leslie McGrath, 120; Leo O'Connell, 320.

Nevada. Carson City District: Marshall H. Alered, 2560; Asa C. Burge, 1920; Crystal Oil Co., 160; Chas. J. Mullen, 1603; John G. Ford, 960; J. W. Dignan, 1280; John F. Kunz, 440; Williard W. Brown, 1280; C.W. Ritter, 640; John F. Wilson, 2560; Wm. R. Aerne, 2560; Mrs. P. H. Westlake, 2560; L. W. Hunsinger, 2560; Eugenia Howard, 2560; Howard J. McDonald, 960; Jos. Guyot et al, 320; Joe E. Gregory, 2560; Nev. Western Oil Co., 640; Volney B. Terrell, 1280; John W. Nichols, 480; Geo. F. Moore, 1120; Lem L. Allen, 2240; Ernest W. Mower, 160; Martha J. Nichols, 160; Chas. W. Hoover, 320; Rebecca Johnson Bon, 2560; Harry G. Pugsley, 640; Wm. D. Atkinson, 1000; John E. and Lynette P. Copson, 2560; Ben A. Nichols, 640; B. A. Boucher, 2549; Capital Oil Syndicate, 160; Mrs. T. Gordon Bracking, 560; Harold D. Atkinson, 280; Chas. H. Kramer, 1434; R. M. Preston, 480; Jos. Jarvis, 2560; Fred J. Franke, 2523, Delbert E. Williams, 2560; Wm. T. Chamberlain, 2536; Wm. E. Maupin, 2557; W. Ray Streeper, 640; Fallon Business Men's Oil Association, 2320; John W. Flood, 2560; Ralph P. Burns, 640; Gavin Baird, 640; Charles L. Drumm, 2400; Sarah Eliz. Coniff, 520; John R. Jones, 320; Edward D. Walsh, 1277; Harry A. Durseater, 624; Josephine Graham, 120.

Elko District: White River Oil Co., 2560; Consolidated Illipah Oil Co., 2523; Mary A. Colburn, 2560; Illipah Petroleum Co., 2560;

New Mexico. Ft. Sumner District: A. B. Roehl, 2175; Wm. G. Robertson, 2260; Gulf & Pacific Oil Corp., 1001; G. L. Rogers, 2480; C. L. Creighton, 2440; Thos. J. Dillon, 2543; Robt. C. Northcutt, 2236; John E. Adams, 2560; Harry G. Howley, 1920; Wm. H. Earickson, 2560; Lawrence E. Lund, 2559.

Las Cruces District: Dean W. Bloodgood, 2440; B. F. Elser, 1280; Albert Fay Fish, 2560; W. B. McBeater, 2560; C. A. Thompson, 1280; L. M. Elser, 640; M. L. Bloodgood, 2560; W. L. Elser, 280; R. P. Elser, 2558; Austin C. Gile, 2556; Vincent B. Mays, 2560; Sarah VanVleeck, 2560; Francis C. Merrell, 2560; Henry L. Newhold, 2478; Frank A. Hawley, 2399; Philip M. Gallaher, 2554; Geo. W. Frenger, 2517; F. C. Halloway, 2568; F. W. Weed, 2207.

Roswell District: J. V. Atwood, 1560; F. Grant Keyes, 2400; W. C. Winston, 2567; J. D. Mell, 2080; H. P. Saunders, 1600; W. J. Alter, 2555; Harry J. Stewart, 2560; Emily D. Brough, 2548; Winfield L. Markham, 2545. Santa Fe District: Elmer C. Hatcher, 248.

Tucumcari District: John T. White, 1040.

South Dakota. Rapid City District: Percy H. Helin, 40; Joseph Fox, 80.

Utah. Salt Lake City District: Wm. J. Cowan, 2560; Gerrit B. Lansing, 2560; Arthur G. Trumbaugh, 2160; A. F. Steretts, 2560; Wilson P. Purtt, 1680; Patrick Sullivan, 2560; Louis Hockels, 2560; John Hockels, 2560; Bessie Moofing, 640; H. A. Rich, 2240; Ira R. Browning, 2400; M. E. Hickman, 2560; E. P. Bacon, 2560; Montford J. Ryan, 2560; Russell G. Schulder, 1360; Alfred H. Westall, 2560; Chas. Allen, 2560; Wm. Johnston, 2560; Guy Lewis, 2560; Ambrose Shinty, 2560; Lee S. Hake, 2560; Morris L. Allen, 2520; Chas. A. Rice, 1200; Rembrandt Peale, 2560; Midwest Ref. Co., 1960; Reuben S. Boyle, 640; John W. Hay, 2560; C. O. Markham, 2480; J. M. Snow, 2560; Miner S. Cussey, 2560; Roger W. Powers, 2560; W. L. Bierbach, 2560; Harry E. Moon, 1600; Arthur H. Bosworth, 2560; Floyd Fetner, 2280; P. R. Hailey, 2240; Rufus C. Hill, 2200; Fred E. Warren, 1280; David H. Cannon, 2560; Carter Oil Co., 2560; H. C. Chappell, 2560; Arthur K. Lee, 2450; Wm. C. Stark, 2560; C. S. Fischer, 2400; A. N. McKay, 2560; F. K. Smith, 2560; Bessie Mooring, 2560; W. F. Earls, 2560; A. L. Dickson, 2560; Chas. K. Wiese, 2560; C. P. Quinlan, 2560; Alfred Kress, 2560; John H. Glenn, 2240; Geo. E. Cramer, 800; M. J. Gotteberg, 640; Ralph A. Harding, 2560; Chas. Tying, 2560; J. W. Hay, 1760; David J. Lemmon, 1669; Herbert V. Lacy, 920; F. H. Morrison, 2160; A. R. Lee, 2560; Erasimus S. Borgguist et al, Anna Erickson, 2560; J. B. Scharta, 2560; Walter J. Schultz, 2560; Mike R. Johnson, 2560; Orvis A. Relf, 2560; Alvin V. Taylor, 2498; Roger W. Powers, 2560; Mary E. Anderson, 1600; Franklin E. Bard, 2560; Henry E. Goodwin, 2400; Chester E. Goodwin, 2400.

Wyoming. Buffalo District: Ursula S. Gatchelle, 2037; C. L. Sackett, 2459; Wm. Edgar Dowine, 640; Wm. J. Thorn, 977; John G. Hoge, 480; Bert C. Prescott, 753.

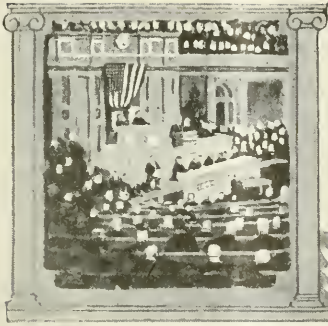
Douglas District: Amer. Exploration Corporation, 2237; Claude L. Freeland, 2560; Harry L. Funkhouse, 2560; E. T. Glenn, 40; Orlando McDonald, 1762.

Cheyenne District: J. O'B. Keener, 632; C. H. Anderson, 160; Centennial Valley Oil Co., 440; Laramie Red Desert Oil & Gas Co., 440; Laramie Red Desert Oil & Gas Co., 640; Robt. C. Middlewood, 320; L. C. Graves, 320; M. C. Greenfield, 2236; Green Mt. Oil & Gas Co., 2360; Wm. E. Marvin, 160; Peter W. Rourke, 320; Arthur C. Gehr, 1280; Harry J. Neely, 1280; Jason G. Louison, 2560; Geo. O. Stephanson, 160; Walter W. Gillett, 1880; L. A. VonTillberg, 160; J. Edison Hines, 2554; W. G. Van Slyke, 2556; Raymond Barber, 1920; E. A. Rogers, 2540; James M. English, 480; Maurice M. Armstrong, 1280; S. P. Hail, 1600; Jos. W. Bingenheimer, 2480; Clinton E. Bivens, 2040; O. E. Ekdahl, 2560; Carl G. Johnson, 2560; M. C. Greenfield, 80; Graddus R. Hagens, 1560; W. R. Williams, 640; Wm. J. Lindsay, 2200.

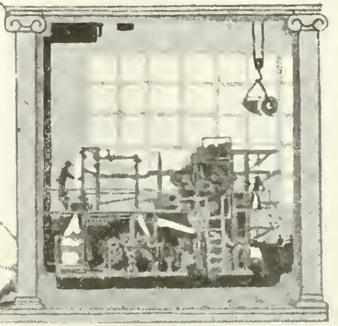
Evanston District: T. E. Fitzgerald, 2227; Hugo B. Anderson, 2560; W. L. Alison, 886; J. L. Greenwood, 1190; Wm. Aujzman, 2347; H. R. Cole, 2240; J. Edward Swift, 1924; J. Tracey Wooten, 2400; Herman Strauss, 1920; R. Leland Watson, 2408; W. W. Wilson, 2079; John H. Wooten, 2047; Thos. O. Glasgos, 840; E. J. Evans, 2482; L. J. Gallentine, 2538; J. A. Rasmussen, 2560;

Lander District: Ira A. Mayfield, 160; Wilson N. Dickerson, 1199; Frederick W. Leete, 1340; Clyde W. Atkerly, 2556; Jacob M. Achwoob, 1265; Lloyd Robbins, 120; Otto J. Rausch, 1853; Indiana Oil & Mining Co., 2237; Clark E. Longshore, 1280; Thos. Ouine, 960.

Newcastle District: Jas. P. Kern, 2162; Robt. G. Cose, 840; Joe W. Barnwell, 880; Jas. Todd, 40; P. R. Heily, 2240; Wm. P. Dudley, 354; Richard P. Ford, 920; Jas. S. Love, 800; Eugene A. Pock, 1253; Wm. M. Kimbrough, 800; John H. Pettey, 1000; Trustee of Blind Pool Oil Syndicate, 2360; Otto Olston, 1280; Jesse A. Smith, 482; Cornelius Williams, 2280; W. S. Barnett, 1735; Clarence E. Loney, 200; Clyde Early, 2356; Thos. L. Coates, 320; Walter E. Coates, 640; Albert B. Olston, 2400; Frank M. South, 40; Ed. J. Dyson, 200; J. A. Tyson, 720.



PUBLIC OPINION



QUESTIONS OF THE DAY DISCUSSED BY STATESMEN AND BUSINESS MEN

CORPORATIONS ARE NOT "SOULLESS"

A STATEMENT of ELBERT H. GARY, chairman of the United States Steel Corporation, is characteristically to the point and interesting. Mr. Gary takes issue with the statement that a large corporation has no soul. In part he says:

"Whether or not the statement is literally true might depend upon your definition of the word 'soul.' A soul is a controlling influence, possessed by individuals, corporations or states, which recognizes as of equal importance the rights, interests and welfare of themselves with all others. The management of a corporation fundamentally stands in a position of balance between three general groups or factors: the security holders, the general public and the masses of the working forces. These must be recognized as rightfully in control. It will be cheerfully admitted that the interests of the general public, are first to be considered. When they clash with private interests, the latter must be subordinated. On this principle our Government is founded. During the twenty years of our existence there has not been material hostility shown or serious complaint made to the management by our workmen themselves, either individually or in committees or groups formed by them which has not been cheerfully considered by the management and promptly disposed of to the mutual satisfaction of both parties. As stated, with repeated publicity, we do not combat labor unions as such. Personally, I believe they may have been justified in the long past, for I think the workmen were not always treated justly. But whatever may have been the conditions of employment in the past and whatever the results of unionism, there is at present, in the opinion of the large majority of both employers and employes, no necessity for labor unions. In discussing the question of labor unions it should be always borne in mind what is commonly known or overlooked or, at least, minimized, that in the United States not more than ten to fifteen percent of labor is, or was, at its highest point during the war, actually included in the membership of the unions. Also that the workmen do not voluntarily join the unions, do not seek the opportunity, do not search for leaders to form and maintain organizations. I am not discussing what is the fair proportion or division of the proceeds of business, between capital, labor and consumer. Possibly there is a solution of or antidote to the labor union problem. I do not believe in socialism; in governmental management or operation; but I do advocate publicity, regulation and reasonable control through government agencies. Members of commissions or departments should be nonpartisan, non-sectarian, based on qualification and moral character. Their decisions should be subject to review by the highest courts. Laws—clear, well defined, practicable and easy of comprehension—covering these matters, might be passed, and if so they should apply to all economic organizations, groups or bodies exceeding certain specified numbers or amounts. Both organized capital and organized labor should be placed under these laws. Each should be entitled to the same protection and be subject to the same restrictions and provisions. Will labor unions consent to this? They have heretofore objected. Here would be a test. Labor union leaders have before now asked and received discriminatory exemptions. This is wrong and it would be just as bad if the situation were reversed. Employers generally desire only the same treatment that is accorded to labor unions. The large majority of workmen also would be satisfied with this standard.

HONEST WORK OR CLOSED INDUSTRIES

"GET TOGETHER" is the advice which C. F. KELLEY, President of the Anaconda Company, gives to both employers and their union workmen. In a recent discussion before a convention of mine operators and representatives of labor organizations, Mr. Kelley made a very proper analysis of the labor situation as it is affected by existing conditions. He impressed the idea that employers, many of them at least, were not antagonistic to unions, but that common sense demanded that they oppose certain methods which all too frequently are adopted by the unions. We quote from an account of Mr. Kelley's address:

"There is no business in the United States that has been hit as hard as metal mining business.

"The labor of the Anaconda Company gets ten cents for every pound of copper that we produced. The freight and refining expense is approximately $2\frac{1}{2}$ cents, so that nearly all of the $12\frac{1}{2}$ or 13 cents we received for a pound of copper was given to you and to the railroads—so that there is not much core left for the Anaconda Company. In addition to what we pay you and the railroads, we have to find money for coal, timber and other supplies. * * * I don't care what the propaganda of the I. W. W. or the Wobbly is, or what your views about the capitalistic system may be, but I do know that on the first of the month the Anaconda Company has to pay its bills, and I do know that it has been difficult to find money enough to pay them.

"I haven't any use for a narrow employer, any more than I have for an agitating radical; one represents a type that is as far wrong from an employing standpoint as the other does from the standpoint of an employe.

"I believe you have a right to organize as long as you act squarely and fairly upon the broad principles of union organization, but there is one thing I don't think you have a right to do and that is impose unnecessary, burdensome, grievous and oppressive restrictions upon industry and I haven't any hesitation in saying that I think you have been guilty of doing things that are costly, inefficient and oppressive in your actions toward us.

"The principle objections the employer has to trades-unionism come from the tendency to preach a slowing up on the job and the constant claim as skilled work that which is not skilled, because skilled work commands a higher rate of pay. There has been no place where we have suffered from these things more than we have right here in Butte.

"It is constant fighting over the jurisdiction of work that makes oppressive conditions. If we can establish reasonable conditions, reasonable rules under which we can go ahead and do business, and if we can cut out these grievances which we feel are foolish and oppressive, there is no reason why we cannot proceed amicably, fairly, decently and self-respectingly and co-operate in our work.

"If we can get down to a decent basis with one another, one that is fair, we are ready to go ahead, and if we cannot, we are ready to break. * * * If we agree, we will continue just as we have in the past to try to live up to our obligations and expect you to live up to yours, and if it comes to the point where we must break, it is a break for good."

PROTECTIVE TARIFF NEED POINTED OUT

THE QUESTION of a protective tariff is of intense interest to the mining industry and when such an authority as SENATOR BOISE PENROSE gives voice to an opinion as to the outcome of the present tariff deliberations, that interest is intensified. The *American Metal Market* of April 20 quotes Senator Penrose as saying:

"The general tariff bill will not be ready for introduction in the House until September. It will carry advances in the duties on lead and zinc and probably a duty on tin which will not exceed four cents and may not exceed two cents a pound and that only as a protection to American tin smelters. To give protection to the American smelter there must be some duty on the metal, with a correspondingly lower duty, or no duty at all on ore and concentrates. The *American Metal Market* expresses the opinion that the prospect of securing revenue by a heavy duty on tin to the disadvantage of American industries using the metal will be foregone, and the duty, if any, will be small and only sufficient to supply a basis on which to arrange some protection for the tin smelting industry. The present administration is on record for the full protection of American industries, and anything except a small duty on tin would be inimical to the hundreds of American industries using tin as a raw material."

CURRENCY COMPTROLLER ON MARKET SITUATION

WHEN AN OFFICIAL of the government is induced to make a public address the country at large is eager to learn what attitude is being taken and when the Comptroller of the Currency speaks great interests surrounds his utterances. D. R. CRISSINGER, Comptroller of the Currency, in an address before the Louisiana Bankers Association, said:

"I have liked to think of the parallel between the tides and currents of the mighty oceans, and the movements of economic forces that answer to the law of supply and demand. The situation with regard to tides and mighty oceans is precisely the same in this day of world-wide neighborhood in economic and financial affairs. Nature abhors a vacuum and so does the economic world. We all know that the war and the subsequent interregnum that was neither war nor peace, did decidedly suspend the normal laws of trade, finance, exchange. These have not yet resumed their sway. We have had overproduction of credits and of printed money, under production of pretty nearly everything else; and along with these has gone an interruption of physical transport and financial exchanges that has depressed the capacity to consume and thus left the appearance of excess production even in lines in which there was nothing of the sort.

"We must recognize the big facts in this matter. One is that European rehabilitation must be slow and its reflection in more favorable business conditions very gradual. The other is that our own country presents to us the market in which we must always do most of our business and on which we shall chiefly depend for establishment of industrial prosperity. There is plenty of consuming capacity here, if we could only make it possible for the potential consumers to buy those things they would be glad to consume. If we can find means to keep our own people working, producing, earning, they will spend their earnings buying the things they have produced, and we will presently see the tides of prosperity running stronger.

"I am not among those who greatly fear a so-called unfavorable balance of international trade. Neither am I one of those who note with complete satisfaction the tendency of the world's gold to bank itself up on this side of the Atlantic. Gold is not particularly useful as an article of diet or clothing or housing. Its function is to provide a generally accepted basis of the money systems on which exchanges depend. If I am correct in the impression that we need to keep our machinery of production working, then we must do everything possible to enable our farms and mines and mills to keep busy. We must help our own people to be able to buy their products. We must also help the outside world to maintain a money system in such relation to gold that exchanges will be possible. Therefore, as to the domestic problem, we must extend, through our financial instrumentalities, every encouragement to the producer. The farmer must be assured, right now, that in his effort to buy fertilizers and seed and implements and labor for the next crop, he will be given the fullest support, the broadest credit, that can possibly be extended through the banks, and that the federal government and its banking structure will stand squarely back of individual banks that wisely and in moderation extend necessary credits for these purposes. Credit as a basis of production there must be; credit as an incentive and means to mere unproductive speculation, there must not be.

"I do not want to be understood as suggesting that the government can be relied upon to do the things that private enterprise, thrift and effort must do, but I am willing that you should very definitely understand me to mean that every possible support and encouragement, consistent with sanity and soundness, based on the consolidated credit and authority of American business and the American government, will be held out in this time of trial and stress. It is useless to worry now about the grists that might have been ground with water that has already gone over the dam. It is enough for the present to say that, although indeed tardily, these problems are going to receive the most prompt and intelligent attention that can be given to them. I am confident that the readjustment of affairs in Europe and in the world at large gives gratifying promise of moving forward in the near future more rapidly and on safer lines than at any time since the armistice."

U. S. REGULATIONS RETARD ALASKA

ALASKA WILL NEVER DEVELOP under government ownership, in the opinion of FALCON JOSLIN, a Seattle mining man. In a recent address Mr. Joslin said:

"We have government ownership in Alaska of the telegraph system, of railroad building, of fur seals and coal mines. That means that all these industries are dead to private enterprises and healthy growth. The country will develop slowly, if at all, under a leasing system with government regulation and control.

"Words can scarcely describe without disrespect, the penurious and oppressive policy of the government relative to the coal and oil resources of the territory. The history is shameful. The country cannot grow without fuel and it will grow slowly or decline as long as it is obliged to import its fuel, as it has been obliged to do for ten years past.

"If capital and industry in Alaska were given as fair and liberal treatment as they had when the western states were new, Alaska would show a growth instead of a decline.

"The real trouble with Alaska is bad government. The seat of administration is in Washington and those who exercise the power get their information by hearsay."

Census figures which show the population of Alaska declined from 64,356 in 1910 to 54,953 in 1920, were quoted by Mr. Joslin.

"One, and that the most serious, cause of decline in population was the action of the government sixteen years ago in withdrawing all the coal and oil lands from location or sale."

DUTIES OF WAR FINANCE CORPORATION

THE REVIVAL of the War Finance Corporation, which met with such general approval, has met with a sustained interest in just what it would consider its functions now that it has been reestablished. EUGENE MEYER, director of the corporation, has stated what he believes to be the duties of the corporation, as follows:

"It is not within the province of the War Finance Corporation to attempt to influence business, or even to advise business men, how to conduct their business. It would seem, however, opportune at this moment for merchants to consider whether or not conditions in the consuming market, and in the present price levels of materials and goods, do not warrant a return to more normal procedure with respect to the stocks of raw materials and finished goods carried by merchants and manufacturers. It would appear that confidence was great at the high price levels of a year ago when the business risks were certainly larger than they are now. It may be well for business men now to ask themselves the question whether or not the present lower price levels do not warrant somewhat greater confidence than exists at the present time. This is a matter for each and every business man, retailer, wholsaler and manufacturer to consider for himself.

"If greater confidence were warranted as a matter of sound business, and a resumption in carrying more normal stocks all along the line were brought about, undoubtedly a considerable part of the load now being forced back upon the original producers of our agricultural products and the banks in the country districts, would be generally distributed and more easily carried by the merchants and banks interested in the processes that are involved in moving the raw material through the various steps that lead to the ultimate consumer. This distribution of the load would result in a freer circulation of business, and in turn improve that part of the consumer's market, which the producers of agricultural products constitute to so great an extent in our country."

BREATHING APPARATUS NEEDS TO BE SUPPLEMENTED

OXYGEN breathing apparatus is not a perfect protection to the wearer against high concentrations of gasoline and other organic vapors, according to A. C. Fieldner, S. H. Katz and S. P. Kinney, who have written a paper on the subject which has been published by the Bureau of Mines. The authors hold that a life-line should be attached to every wearer of such apparatus, so that on signs of distress he may be withdrawn from the dangerous atmosphere. They hold, however, that such an apparatus is impermeable to all gases ordinarily encountered in mine rescue work.

Mining and Petroleum Digest

TARIFF MUST BE BASED ON WORLD TRADE PRINCIPLES

TARIFF LEGISLATION to be of the greatest benefit to the whole United States must comprehend the world's trade situation today uninfluenced by any provincial or political views. With the knowledge that the present Republican Congress will pass a tariff law, the press of the country has been emphatic in emphasizing the above statement. The GUARANTY TRUST COMPANY of New York emphasizes this statement by saying:

"At a time when vast debts are owed by foreign countries to the United States—debts that are so great that the possibility of payment in gold is out of the question—it is a matter of concern that it should be seriously proposed to erect additional heavy barriers to such payment as might be made through the importation of foreign raw materials, food products and manufactured commodities. A complete understanding of today's world trade situation must guide the course of the tariff legislation which will come before Congress if the United States is to benefit in full measure from her position as a creditor nation.

"The United States, with exports of $8,000,000,000 in 1920, and with an aggregate favorable trade balance exceeding seventeen billion dollars for the last seven years, now has a very heavy stake in foreign trade, too heavy to ignore or to risk by uneconomic or ill-considered legislation. There was never a greater need for a widespread recognition by the people of the United States of the broad basic principles of trade. The United States must be protected from unrestricted floods of imports arising from the inequalities of wages and depreciated exchanges. Security from these cheap foreign costs cannot be derived from any single, all-inclusive tariff, it might be found in a more flexible arrangement, by treaty or otherwise, which would equalize the selling prices of varied foreign goods in our markets.

"If wisdom and foresight characterizes our action toward foreign nations in the next few years, there is nothing that can dislodge us from a position of leadership, both in trade and in finance. It will be unfortunate if we risk this great opportunity by a shortsighted and provincial outlook upon the present situation.

RELATIONS WITH MEXICO

"A WHOLESOME BREEZE from the north began to blow into Mexico on March 4," is the opening sentence in an editorial on "Our Neighbors To Southward" which appeared in the *Boston News Bureau*. Taking the position that "watchful waiting" is now at an end, the editorial comments especially upon the effects which will be produced in Mexico by the knowledge that Secretary Fall and Secretary Hughes are now in the cabinet:

"The new Administration, while insisting on the square deal, will undoubtedly allow generous time to bring about the right state of affairs, provided evidence is given that the proper course is being pursued. If not—

"The selection of Charles E. Hughes for secretary of state and of Senator Albert Fall for secretary of the interior is the answer. The two are as one on the Mexican situation. Hughes knows of the long list of Mexican atrocities against Americans, of the protests filed at the department of which he will shortly become head, and of ineffective action thereon.

"Senator Fall's attitude is a matter of public knowledge. It may be taken for granted that his views are acceptable to Mr. Harding. He has been the latter's close adviser since the election, and as a member of the cabinet will wield a dominant hand on this one phase of international affairs, if on no other, even though the subject is outside the scope of his department. And Mr. Hughes, though not given to a division of responsibility, will be so thoroughly of the same mind that there will be neither dissension nor rivalry.

"Mr. Hughes has already spoken to naughty Costa Rica and Panama. Mexico will undoubtedly not court words of reproof from him. It knows they would be meant."

CUSHING SAYS COAL PRICES WILL NEVER RETURN TO NORMAL

A SUBJECT which is of vast concern to every person in the country is the question of the price of coal. According to GEORGE H. CUSHING of the American Wholesale Coal Association coal prices will never return to their old level. Mr. Cushing says:

"Labor cost of producing a ton of coal used to be from $2 to 92 cents a ton, while today the cost in the same mines ranges between $2.14 to $2.19. Cost of supplies is 36 cents against 6 to 10 cents; and cost of overhead is 55 cents a ton minimum against 8 to 12 cents formerly. Total cost of production has risen from about $1.14 to about $3 and in addition the average freight rate has increased from $1.41 a ton in 1914 to $2.51.

"Out-turn cost at the point of discharging the railroad car has thus increased since 1914 from an average of $2.56 to a minimum of $5.51, allowing nothing for cost of selling and profits.

"Profits of the coal industry in 1920 cannot yet be determined, few companies having yet completed income tax returns, but estimated net margin after selling cost on 13,000,000 tons is 31 cents. Out of this 31 cents the wholesalers paid excess profits taxes of about 15 cents, leaving a net margin of some 16 cents. From this was deducted about 4 cents as interest on borrowed money, leaving net profit to wholesalers approximately 12½ cents a ton or 9½ cents on invested capital.

"By way of comparison, in 1914, gross margin averaged 7½ cents a ton before deducting selling cost. In other words, out of pocket selling cost in 1920 was four times the pre-war gross margin which covered selling cost and profit. Average gross margin in 1920 was some eight times the total gross margin in 1914."

UTAH CHAPTER COMMENDED

EFFORTS of Utah metal producers, through the Utah Chapter of the American Mining Congress, to secure the enactment of needed national tariff legislation, have received editorial commendation from the *Salt Lake Tribune*. The *Tribune* points out that the copper situation is not the only troublesome factor in the life of Utah producers, and continues:

"The metal producers of the state are preparing to make a vigorous campaign before the special session of congress to obtain relief through protection against importations of foreign lead. It is evident that such relief cannot await the enactment of the regular tariff bill, even should its passage come as expeditiously as the most optimistic expect. Efforts will, therefore, be made to protect the domestic producers through anti-dumping legislation. The local metal producers will not attempt to have their products included in the emergency agricultural tariff bill.

"The efforts of the metal producers deserve the heartiest support of all the people of Utah. All do not realize the extent to which the mining industry affects the life of the state. Besides furnishing directly the largest pay rolls, metal mine products furnish approximately 25 percent of the total freight tonnage and are the largest users of power. Every curtailment of mining operations, therefore, immediately affects other important industries and those dependent on them and indirectly affects all citizens of the state.

"In this connection, we are glad to note that Senator King of Utah anticipated the suggestion made in yesterday's *Tribune* relative to the attitude that should be taken by Democratic senators from western states. In a telegram to the Utah chapter of the American Mining Congress Tuesday he expresses sympathy with the plan for relief suggested and promises his support. His attitude is one to be commended to his Democratic colleagues from the western states and, indeed, to all members of the national congress, as the very existence of a basic industry is at stake.'

WILLARD THINKS COUNTRY IS ON THE ROAD TO RECOVERY

A QUESTION which the public is more interested in than any other is, "When will the present depression end and when will business again assume a prosperous aspect?" DANIEL WILLARD, President of the Baltimore and Ohio Railroad, believes that we are on our way to recovery. Mr. Willard says:

"We have probably reached the bottom of the business depression. I do not expect to see any rapid increase in business; I do expect to see a gradual but constant increase in business offered the railroads from now on but I doubt very much if we get back to the basis of last October during the present year. The impression which I have concerning the business situation causes me to have a feeling of conservative optimism regarding the future."

"REAL OPEN SHOP WILL WIN, AND IT OUGHT TO WIN"

"INDUSTRY," the publication of the National Manufacturers Association, has been very ably presenting arguments, pro and con, as to the value of the open or closed shop. In a recent issue they publish a statement by DR. CHARLES AUBRY EATON, editor of Leslie's Weekly, which we quote in full:

"The everyday American is for the open shop and against the closed shop. And this definite attitude is not the result of economic or social bias. It is a question of American citizenship. The closed shop will not permit a non-union man to work in it. If he tries to work there he is terrorized by his fellow workmen and driven out.

"The constitution of our country guarantees every citizen the right to work where he chooses. The closed shop, which denies this right and enforces that denial by private and unlawful terrorism, is therefore un-American to the last degree.

"On the other hand, the open shop is supposed to be free and open to any man whether he be union or non-union. This is called the "American Plan." And this is the issue upon which the big fight is coming.

"The union leaders tell us that the employers are not sincere; that they are really working for a shop closed to the unions and open to everyone else; and that the open shop is simply a non-union shop.

"The people want to know and must know the truth about this. If the employers who have really struck against the tyranny of unionism are simply fighting for power; if they are seeking merely to wrest power from the unions and transfer it to their own hands, they can never win. The public is sick of despotism and exploitation and hypocrisy. The American people want an open shop in which any man may work.

"The real open shop will win, and it ought to win. It is an American proposition and has public opinion with it. But it has a price attached. If tomorrow the open shop is established everywhere it cannot and will not last the day out unless the employer is willing to pay the price. That price is that the employer shall voluntarily do for his employees, in so far as their demands are just, what now the labor union forces him to do. And further that the employer himself shall become the leader of the men in his employ.

"If the struggle for the open shop is simply a struggle for power rather than an effort to establish justice, it will fail and it ought to fail. But if it represents a real moral movement in which reason and justice are to take the place of brute force in industry, it will prove to be of enormous value to the whole country.

"No man can be the head of an open shop who is not white and true clear through. He must become the leader of the men in his employ or he cannot expect them to turn from the leadership of the union official.

"We want the open shop—but can we pay the price? That is the real issue. The open shop would come without a struggle if employers everywhere demonstrate that they are big enough and good enought to head an open shop. The only way to get rid of tyranny is to put something better in its place."

DISCOVERY OF FLOTATION

APROPOS of the Minerals Separation, Ltd., litigation over the ownership and use of the flotation process, in which miners and some of the world's greatest scientists are interested, the *Wall Street Journal* intervenes to claim credit of discovery for one who never received any financial advantage therefrom. Under the caption of "The Observant Washerwoman," the writer says:

"There is considerable interest, just now, in the 'flotation process,' used to refine certain copper ores. These ores consist of rock containing tiny flecks of metallic copper. They are ground to powder, thrown into a tank of water containing about one per cent of oil, and violently agitated. The oil coats these particles of copper and causes them to cohere; they cling together, rise into the dense froth at the top of the tank, and are skimmed off and refined. This was perhaps the most revolutionary advance in copper extraction and has made many millions of dollars for the English-American company which now controls it.

"It was discovered by a miner's wife while washing dirty overalls. As she soused them vigorously in the soapy water, streaked with machine oil, she noticed that the suds showed odd glints of light. When she gathered some in her hand, the bubbles disappeared and left flakes of metallic copper on her skin.

"This was the inception of the flotation process, but what the intelligent and observant woman got from it is not a matter of record."

MOVIE SILVER "MINER" CHARGED WITH BEING NUISANCE

SOLID SILVER is being extracted from the liquid waste of Los Angeles motion picture film laboratories and shipped in ingots weighing forty pounds each to the San Francisco mint. The Los Angeles *Sunday Times* shows that more than $315,000 worth of the metal is now being recovered annually from waste waters which formerly flowed into the sewers. One of the firm of "miners" was recently arrested on a charge of maintaining a public nuisance, but his court experience was not allowed to interfere with the conduct of his operations.

Precipitation of silver from waste hypo is not a new industry, but the scale of operations of the Los Angeles "miners" is so large as to warrant interest in their methods. Something of this feature is contained in the following excerpt from the article in question:

"The waste solution contains from a fourth of an ounce to an ounce of silver per gallon. The recovered metal is classified by the government as "foreign" and now is marketed for a sum varying from 54 to 60 cents per ounce. "Domestic" silver, that which is dug from the ground, sells for 99½ cents per ounce. Mr. O'Neil says there is no real difference in the quality of the two "kinds" of silver, this merely being the government's method of protecting the mining industry.

"Hollywood, Universal City and Los Angeles produce about 8,000,000 feet of film per month, which is about 90 per cent. of all the negative film made in the United States, though most of the printing is done in the eastern distributing centers.

"The waste hypo is carted in big tanks from the studios to the refining plant. There the tank is swung from the truck and suspended from a scaffold. The solution is then pumped into the big vats where the silver is precipitated by chemicals. After standing in a vat for ten days the silver settles to the bottom of the tank in the form of a black mud, known as "silver mud," and the water is drawn off and transferred to another tank. Ten days more are required in turning the "silver mud" into money, after it has passed through a filtration process and baked in a huge oven.

"When every particle of moisture has been baked from the mud, it is melted with iron and sawdust in a furnace, a process which causes the metallic silver to settle on the bottom of the crucible. The slag is then skimmed from the molten metal and the silver is poured into molds and transformed into forty-pound ingots for shipment to the mint at San Francisco."

LAWLESSNESS OF LABOR LEADERS

THIS is the caption of an editorial in the *Manufacturers Record* which deals with the spirit of lawlessness in America. Not all of the blame is laid to the labor leaders, but a large share of it is. The writer has evidently thought long and hard about the industrial situation, and he arrived at some very pronounced conclusions. We read:

"The spirit of lawlessness, which has been growing constantly in our country, is due in part to the false teachings of the press, many men who claim to be ministers of the Gospel and of politicians who have yielded to the socialistic trend of the hour and ignored the rights of the nonunion labor men. Murder is murder, whether it be committed by the robber who murders for the loot he can get, by the man who murders out of revenge for some fancied injury, or by the labor man who deliberately murders his fellow-man with a spirit of hatred with which he intimidates the fellow-man who does not bow his neck to the yoke of the labor leaders.

"Until men are taught that the murderer, whether he be a union labor man or any other criminal, must pay the penalty in the penitentiary for life or on the gallows for murder, we shall have growing disorder and increasing murders throughout the land.

"The man who insists from the pulpit or through the press or from the political platform that this country must yield to the domination of labor unions, many of whose members are foreign to our ideals and institutions, is merely encouraging the spirit of riot and of murder. The man who upholds labor unions in these crimes, or in the teachings which lead to these crimes, is a criminal at heart, and is responsible for the innocent blood that is shed by all union labor men who, misled by radicalism, seek to vent their vengeance upon other labor men. Until intelligent, law-abiding union labor men assert their supremacy in their organizations and make membership in their unions synonymous with law and order, with efficiency and honesty, the country cannot afford not to demand the open shop as the synonym of America and independence and law and order.

"The tolerance with which law officers and the public have often dealt with the violence of strikers is in itself a crime, provocative of continued growth of criminality throughout the country. By its unwise tolerance of such acts the country itself has almost placed a premium upon criminality. It has encouraged the less intelligent rougher element of labor unions to believe that they have a right to murder their fellow-men, and it is hard for them to understand why this is not true when they are constantly taught from socialistic platforms, from socialistic mouthing political speakers and from the inaction of law officers that they are justified in killing their fellow-workers. We are placing a premium upon criminality, we are sowing the seeds of anarchy, when as a nation we permit such teachings to be spread broadcast throughout the country.

"The riotous conditions around the Cramp shipyard in Philadelphia, the effort to murder men who want to work, to trample down even women who seek to protect their husbands from murder, is only typical of the growing spirit of criminality fired by labor leaders in all parts of the country."

NORTHWEST DIVIDENDS REACH LOW LEVEL

THAT the mining industry of the northwest is apparently in a syncline of depression, is the conclusion reached by the *Northwest Mining Truth*. This publication, which has complete records for ten years, shows that dividends from northwest metal mines during the first quarter of this year reached a record low level. The total was only $615,250, all derived from four Coeur d'Alene concerns, with both British Columbia and Washington, showing a complete blank for the first time in more than a decade. The article mentioned continues:

"The result is nothing more than could have been reasonably expected considering the severe handicaps under which the industry is now staggering. While labor has become more plentiful and more efficient, thus removing the greatest deterrent factor of the early part of last year, metal prices have slumped badly and there appears to be no assurance of early improvement, except through action of Congress in the matter of tariff on importations of lead and zinc. Meanwhile, railroad freight rates, particularly upon bullion from western smelters to eastern points, remain at prohibitory levels, while many of the commodities which enter into mining development, particularly powder, still stand at unconscionable levels, as if suspended in aid.

"Comparison of this quarter's dividend returns with those of the same quarter in 1920 will tell the story in the most graphic manner and we there-

"For the balance of the year prognostications can be of little value. All depends upon the adjustment of freight rates and commodity cost, plus the direction of the metal markets. As things look now, the returns for the year will run far short of any realized in the past six years, with perhaps not more than $3,000,000 from the Coeur d'Alenes and not more than $1,000,000 from British Columbia, even if conditions improve. So far as Washington is concerned, there seems to be little probability of profit distribution.

"The mining industry of the Northwest is apparently in the syncline of depression and it will take time to correct the conditions which have caused the decline. The most reassuring feature of the whole situation is that the Northwest is in better shape than other parts of the country and that it may be expected to show quick improvement if the price of lead advances, or Congress should take prompt action upon the question of tariff. With that we must be content till the clouds roll by.

MR. HOWAT ARRESTED AGAIN

LABOR'S ATTITUDE toward laws and courts, as reflected by the actions of its leaders, is seen in the activities of President Howat of District No. 14, United Mine Workers of America. *The New York Times* takes occasion to point out the disregard for legal processes which Mr. Howat invariably manifests:

"The President of District 14, United Mine Workers of America, has been arrested again. There is no surer sign of Spring. Last year Mr. Howat was arrested for ordering a strike against the tyranny of the Kansas Court of Industrial Relations. Year before last he was more successful in his defiance of the hated court, for the sheriff allowed him from the jail steps to make a speech, in which he denounced Kansas's 'skunk of a Governor.' Mr. Howat sometimes stays in jail as much as a week when the union lawyers are slow in filing a bond. In that manner he is now free, although under sentence for contempt of court and charged with felony under the Industrial Court law. Mr. Howat's view of the law is that it does not apply to labor. When it was passed the legislature was thinking of the public which the mine workers were depriving of fuel in midwinter.

"Mr. Howat errs in thinking that 'this law is meant to enslave organized labor.' He even thinks that the law is 'only the beginning' of a movement designed to destroy unionism in the entire country and to chain workers to their jobs. It is said that there are a million or two of workers who would like to find jobs to be chained to. But in the present strike the enslaved workers have all the honors of war. Mr. Howat does not even recognize that there is a court, although the court takes notice that there is a strike."

IT PAYS TO BE A FARMER

FREE POWDER is being offered to the farmers. The *Wallace* (Idaho) *Miner* is glad of it and hopes that the gift will be of benefit not only to agriculturists, but to the food resources of the country also, but cannot resist the temptation to note that no one has yet suggested giving free powder to miners, who can certainly make as good use of it as anybody else. The *Wallace Miner* might also have added that the miners need help as badly as anybody else, for certainly, from a financial standpoint, the farmers have not suffered any more than they. We quote:

"An amendment to the agricultural appropriation bill passed by the last congress provided for the free distribution of twelve million, five hundred thousand pounds of explosives to the farmers of the country to be used in clearing stumps and stones from their land. It is stated that this powder is deteriorating and that it must be used in the near future if used at all. This will no doubt prove of great assistance to the farmers of the country, who, like the miners, have been forced to pay wartime prices for what is known as stumping powder, and the action of the government in giving them this surplus stock will not only be of immediate benefit, but will probably force the powder manufacturers to reduce the price. It is too bad that the mining industry can not get an advantage of this kind. The prices of explosives used in mining are practically the same today that they were during the war, possibly a little lower, but still almost double the pre-war prices."

SILVER ERA DAWNS IN ALASKA

ALASKA has had her golden era and her copper days, and now, according to Juneau mining men interviewed by the San Francisco *Bulletin*, is about to enter her silver age, when the white metal will take its place among the leading mineral products of the territory. Lead is also receiving unwonted attention. The article continues:

"From many parts of the northland come reports that the present market price of silver has induced many prospectors to search the hills and valleys for silver ledges, which, in the fever of the old rich gold placer days, were passed up. And where promising silver discoveries have been made capital has been obtained easily for their development.

"Gold and copper have not ceased to become leading Alaska productions, it is believed, but present conditions make it impossible to work for them on a large scale. Operating costs are still too great for any extensive workings in the gold fields, and copper today is selling for less than the cost of production.

"So to silver, the "white hope of the North," miners are turning. The Kantishna district of Western Alaska and the Yukon valley district, near Ruby, are showing silver prospects and are being worked. An extensive galena showing has been uncovered in the Wild river district of the Koyukuk country. Prospectors in the Broad Pass country, near the government railroad, and in the Alaska peninsula have also found galena.

"Across the Canadian boundary, in the Yukon Territory, near Dawson, the old gold capital, mining interests are making extensive silver explorations at Mayo. Galena is being shipped regularly from Mayo."

GEOLOGICAL SURVEY NOTES

SIDNEY PAIGE and A. I. Jonas have returned from a field trip to Maryland and Pennsylvania.

K. K. KIMBALL has resumed co-operative mapping of Tennessee marbles.

T. WAYLAND VAUGHAN has returned from Port au Prince, where he has been inspecting geologic work in Haiti. W. P. Woodring and party left Haiti for this country April 1.

H. W. DAVIS has been in western Kentucky and southern Illinois, where he was occupied for three weeks in gathering fluorspar statistics.

J. H. WILKE, W. S. Beames, Crawford Dickey, J. F. Woodward, and V. S. Seward have been assigned to field work in Mississippi.

H. R. KILMER, F. M. Schilling, E. E. Harris, and H. P. Kilby have gone to West Virginia to begin field work.

W. B. UPTON, Jr., having completed work assigned to him in Texas, has reported for office duty in Washington.

H. E. SIMMOS, S. E. Clement, and T. F. Murphy have been assigned to field work in Texas.

RALPH R. WOOLLEY, of Salt Lake City, reached Washington March 16 and will be employed for a few months in the Washington office completing a manuscript report on the water powers of the Great Salt Lake basin.

JACOB B. SPIEGEL, who had been engaged in stream-gaging work in Arizona, has returned to the Denver district.

ROGER C. RICE has been transferred from the position of district engineer in Kansas to a similar position in Arizona, with headquarters at Tucson. E. L. Williams succeeds Mr. Rice as district engineer in Kansas.

GEOLOGICAL SURVEY PUBLICATIONS

Coal in 1918; Part B, Distribution and Consumption; by C. E. Lesher, Geological Survey.

The Divide Silver District, Nevada; by Adolph Knopf, Geological Survey.

Character of Coal in the Thomas Bed Near Harrison, West Virginia; Marius E. Campbell, Geological Survey.

Geography, Geology and Mineral Resources of the Fort Hall Indian Reservation, Idaho; by G. R. Mansfield, with a chapter on water resources by W. B. Heroy, Geological Suvery.

Coal in the Middle and Eastern Parts of San Juan County, New Mexico; by Clyde Max. Bauer and John B. Reeside, Geological Survey.

The Mogollon District, New Mexico; Henry G. Ferguson, Geological Survey.

SALT, BROMINE, AND CALCIUM CHLORIDE IN 1919

AMERICA'S salt bill in 1919, the latest year for which statistics are available, amounted to $27,074,694. This calculation includes only the salt which was produced in the United States, amounting to 6,882,902 short tons. There was a decrease of 4.9 percent in quantity and an increase of .5 percent in value as compared with 1918.

Fifteen states and territories produced salt in 1919, and there were 102 operating plants in the United States. The leading producers were: Michigan, 2,492,378 short tons; New York, 1,947,829; Ohio, 991,730; Kansas, 773,576; California, 200,115; Utah, 77,336; West Virginia, 18,599; Idaho, 39. The other states produced 381,300 tons.

The consumption of salt per capita was 116 pounds. Importations during the year were very small; exportations during the year amounted to 238,831,706 pounds, or 119,416 tons.

It is interesting to note that one of the uses of salt is found in the manufacture of poison gas. Chlorine, the main element of one of the most deadly of these gases, is made from salt by an electrolytic process. The salt is broken down by electrolysis and chlorine gas is driven off.

Bromine production during 1919 amounted to 1,854,971 pounds valued at $1,234,969. This was an increase of 7.4 percent in quantity and 27.3 percent in value over that of 1918. The quantity produced in 1918 was itself an increase of 92.9 percent over that of 1917. About 94 percent of the 1919 output came from Michigan and the remainder from Ohio and West Virginia. Most of the output was marketed not as bromine, but as potassium and sodium bromide and other bromine salts.

The production of calcium-magnesium chloride in 1919 amounted to 26,123 short tons valued at $321,596. As compared with 1918, there was a decrease of 1.9 percent in quantity and 36.1 percent in value. Calcium chloride is used mainly for the prevention of dust on roads and playgrounds, in brine for refrigerating plants, for fire protection, for the prevention of freezing, and as a drying agent.

NOME GOLD FIELDS

GOLD worth nearly $80,000,000 has been produced in placer fields of Nome, discovered in 1898. Operations in this field were discussed fully in a recent paper entitled "Mining on Seward Peninsula Alaska" by George L. Harrington of the United States Geological Survey.

Much of the gold mined in the Nome region is taken out by the use of dredges. Twenty-two dredges in 1919 produced $450,000 worth of gold, and open cut and deep mining during the same year produced gold which brought tne total output of Seward Peninsula for the year up to $1,360,000. About 20 ounces of platinum, and 56 tons of placer tin were also produced on the peninsula in 1919.

MAGNESITE IN 1920

PRODUCTION of magnesite in the United States in 1920 amounted to 303,767 short tons, valued at $2,784,150, or 94 percent more than that of 1919. California and Washington furnished the entire output. The increase in California over 1919 was 63 percent and that of Washington 109 percent.

Most of the California output was calcine and used as plastic material. A small part of it, which was natural ferro-magnesite, was used as a refractory lining for steel furnaces. Practically the entire production of Washington was dead-burned into synthetic ferro-magnesite and used as a refractory lining for smelters and furnaces.

The Geological Survey recently made an announcement containing the statement that some of the California producers were considerably discouraged at the end of the year on account of the high cost of labor and supplies, high freight rates, and the competition of foreign material.

Imports of magnesite during the year, reported by the Bureau of Foreign and Domestic Commerce as calcined, not purified, totaled 43,154 long tons, valued at $780,078.

Production for eight years in California and Washington follows:

Crude magnesite produced and sold or treated in the United States.

1913-1920. (Short tons)

Year	California	Washington
1913	9,362	....
1914	11,293	.....
1915	30,499	....
1916	154,259	715
1917	211,663	105,175
1918	84,077	147,528
1919	50,020	106,206
1920	81,782	221,985

CONVENTION DATES

May 4, 5 and 6.—Fifth annual Spring convention of the Indiana Retail Coal Merchants' Association at Tabernacle Building, Indianapolis, Ind.

May 9-11.—Seventh annual convention of the American Association of Engineers.

May 12, 13 and 14.—Fourth annual convention of the National Retail Coal Merchants' Association at Richmond, Va.

May 15-16.—Sixth conference of secretaries and executives at the Baltimore Hotel, Kansas City, Mo.

May 16, 17 and 18.—Annual convention of the Colorado Retail Coal Dealers' Association at Fort Collins, Colo.

May 19-20.—Annual convention of the National Coal Association at the Waldorf Astoria Hotel, New York City.

May 24, 25 and 26.—Thirteenth annual meeting of the international Railway Fuel Association at the Hotel Sherman, Chicago.

June 7.—Annual convention of the American Wholesale Coal Association in Washington, D. C.

June 22, 23 and 24.—Annual convention of the Pennsylvania Retail Coal Merchants' Association at Harrisburg, Pa.

October 17 to October 22.—Twenty-fourth annual convention of the American Mining Congress at the Congress Hotel. National Exposition of Mines and Mining Machinery at the Coliseum.

TUNGSTEN IN 1918

PRODUCTION of tungsten in the United States in 1918, figures for which have just been announced by the Geological Survey, was equivalent to 5,061 short tons of concentrates, carrying 60 percent of tungsten trioxide. The value was $7,049,300, an average of $23.22 a unit. This production compared with 6,144 tons in 1917 and 5,923 tons in 1916. Production by states during the last three years reported was as follows:

Concentrated tungsten ores (carrying 60 percent of tungsten troxide) produced in the United States, 1916-1918 by States, in short tons.

State	1916	1917	1918
Alaska	47	32	14
Arizona	218	150	213
California	2,171	2,781	1,791
Colorado	2,401	2,707	1,910
Idaho	101	2	...
Nevada	689	143	898
New Mexico	16	(*a*)	4
South Dakota	239	270	201
Other States*b*	41	59	30
	5,923	6,144	5,061

a Less than 1 ton.
b 1916: Connecticut, Missouri, Montana, Oregon, Utah, and Washington; 1917: Montana, Oregon, Utah, and Washington; 1918: Montana, Utah and Washington.

CANADA'S MINERAL PRODUCTION LARGEST ON RECORD

THE HIGH POINT in value of mineral production was reached in Canada last year, the total being $217,775,080, or $6,473,183 greater than that of 1918, the previous maximum figure. An announcement by the Canadian Bureau of Information based on preliminary calculations of the Canadian Department of Mines shows that production in every province except Yukon was greater than in 1919.

"Canada now occupies an almost unique position in being perhaps the only gold producing country which has not shown a serious falling off in the production of this metal," the announcement says. Gold production really increased during the last two years, although the increment was small.

Production of some of the leading metals during the last two years follows:

	1919	*1920*
Copper, lbs.	75,053,581	81,155,360
Gold, ounces	766,764	766,912
Lead, lbs.	43,827,699	33,985,974
Nickel, lbs.	44,544,883	61,136,493
Silver, ounces	16,020,657	12,793,541
Zinc, lbs.	32,194,707	40,166,200
Pig iron, tons	818,447	973,498
Coal, tons	13,681,218	16,623,598
Asbestos, tons	157,572	157,904

The metallic production of 1920 was $77,236,370, as compared with $114,549,152 in 1918 and $73,262,793 in 1919. The value of non-metallic production, including clay and quarry products, was $140,538,710, as compared with $96,752,745 in 1918 and $102,423,507 in 1919.

Mineral production by provinces during the last two years follows:

	1919	*1920*
Nova Scotia	$23,445,215	$30,187,533
New Brunswick	1,770,945	3,225,261
Quebec	21,267,947	37,722,502
Ontario	67,917,998	78,749,178
Manitoba	2,868,378	3,900,207
Saskatchewan	1,521,964	1,711,580
Alberta	21,097,582	33,721,898
British Columbia	34,865,427	38,044,915
Yukon	1,940,934	1,512,006

THE SIXTY - SEVENTH CONGRESS of the United States opened April 11. Intense interest has centered around this special session, which has before it such a gigantic task. It has not kept the country in suspense as to the character of legislation which it proposes to enact and a multitude of bills have been introduced. Over two thousand bills were introduced the first day of the session and up to this writing, April 21, there have been introduced 5857 bills, 4827 in the House of Representatives and 1030 in the Senate.

Special interest centers around the revision of the tariff, so far as mining is concerned, there being twenty-five minerals asking for protection, which are as follows: Antimony, Arsenic, Asbestos, Barytes, Bauxite, Chromite, Feldspar, Fluorspar, Graphite, Gypsum, Kaolin, Lead, Lime, Manganese, Magnesite, Marble, Mica, Molybdenum, Monazite and Thoridum, Pyrites, Pumice, Potash, Quicksilver, Tungsten, Talc, Zinc.

Of secondary importance, only on the calendar, and not in the interest of the industry, is revenue legislation. Bills already have been introduced for the regulations of the coal industry and for regulation of grain. Congress itself has given very little consideration to any matters which affect the mining industry with the exception of the introduction of bills and the consideration by the various committees of proposed legislation, such as that given to mineral tariffs by the Ways and Means Committee, its time being largely consumed in the discussion of the ratification of the Colombian Treaty and the emergency tariff, which latter bill does not include metals.

In addition to the enormous questions of tariff and taxation it must dispose of speedily the large appropriation bills which failed of passage in the Sixty-sixth Congress. The following bills of interest to the industry have been introduced:

IMPORTANT BILLS BEFORE CONGRESS

COAL:	
S. 824	Federal Coal Commissioner
H. R. 20	Federal Control Act
S. 11	Seasonable Rates
H. R. 3720	Government Purchase of Coal
H. Res. 41	Report on Coal Resources
TARIFF:	
H. R. 2255	Lead
H. R. 2256	Barytes
H. R. 2390	Granite
H. R. 2468	Tungsten
REVENUE:	
H. R. 215	Revenue Act of 1921
S. 202	Sales Tax
H. R. 236	Repeal Excess Profits
H. R. 229	Net Losses
H. R. 2368	Imposing Special Taxes
H. R. 2226	General Sales Tax
H. R. 29	Exemptions
H. R. 256	Increase Income Tax
WAR MINERALS:	
S. 813	Liberalizing War Minerals Relief Act
H. R. 3735	Liberalizing War Minerals Relief Act
H. R. 2450	Liberalizing War Minerals Relief Act
OIL SHALE:	
H. R. 2348	Special Investigation

COAL

S. 824. Introduced by Mr. Frelinghuysen; referred to the Committee on Interstate Commerce. (*Federal Coal Commissioner.*) The bill provides that the President shall appoint a Federal Coal Commissioner to hold office for a term of five years and receive an annual salary of $10,000. He shall not engage in any other business, vocation, etc. In case of a vacancy in the office of commissioner the President shall appoint a person to serve as commissioner for the remainder of the unexpired term. The principal office shall be in the District of Columbia and the commissioner shall investigate the organization, management and practices of dealers and operators, costs and profits in connection with the mining, sale, and distribution of coal, the terms contained in leases of coal mines, the prices demanded or received for coal, the distribution, storage, and sale of coal, and the methods and processes employed therein; the consumption of coal, and the transportation of coal in commerce, including the distribution of coal cars. He shall also investigate the wages, working conditions, terms of employment, and the living expenses of miners. He shall investigate methods and processes for the storage of coal and conduct such experiments and researches as he may find advisable to determine the most efficient means for such storage. He shall investigate the desirability and practicability of prescribing statutory standards for various kinds and grades of coal, and shall submit a report thereon to Congress before April 1, 1921. He shall also investigate the desirability and practicability of a statutory zoning system defining the distance from the mine within which coal therefrom may be transported in commerce and shall submit a report to Congress before April 1, 1921. He shall make a report to Congress on or before the first day of December in each year setting forth the work and activities of his office for the past year. The Interstate Commerce Commission and the Federal Trade Commission are authorized to co-operate with the commissioner who shall at all times, either himself or through his duly authorized agents, have access to and the right to examine the mines, offices or other place of business of any operator or dealer and shall have the right to copy any books, records, papers, correspondence, or any entries therein. Any operator who shall neglect or refuse to permit the commissioner to make this examination shall be guilty of a misdemeanor and shall on conviction be punished by a fine of not more than $1,000 or by imprisonment for not more than six months, or both. The commissioner is empowered to require operators and dealers to file with him in such form as he may prescribe, annual and special reports or answers in writing to specific questions, furnishing to the commissioner such information as he may require as to the organization, practices, management, relation to other persons, costs, prices and profits of the operator, such reports and answers to be made under oath. A fine of $1,000, imprisonment for not more than six months or both is imposed for violation of this section. The sum of $50,000 is appropriated.

H. R. 20. Introduced by Mr. Newton; referred to the Committee on Interstate and

Foreign Commerce. (*Federal Coal Control Act.*) The bill provides that the Federal Trade Commission is authorized and directed to currently require, secure, and compile reports respecting ownership, production, distribution, stocks, investments, costs, sales, margins, and profits in the coal industry and trade from persons or corporations interested in the production, etc., of coal, requiring such separation of the information as to enable calculations to be made to show separately costs and profits as to the following classes of investment and business: The investment actually used currently in the business of producing, selling, or distributing coal; investment in land or other items, including expenses incidental thereto held for future use or development; and other investments not directly used in the production, and may investigate from time to time the organization, etc., of such persons and corporations, including also any corporations acting as a holding company for or guarantor of the stock of any such corporation, and including also any partnership acting in a capacity analogous to that of such a holding company, and also the organization, etc., of owners of coal lands and report its findings and recommendations to Congress. They also shall investigate and report as to all financial interrelations, including contracts between owners, operators, or dealers, or other persons or corporations, in so far as may be necessary to determine the full profits of owners, etc.; the existence of any combination or relationship which may tend to lessen competition or to create a monopoly in the coal industry, however, persons or corporations interested as consumers only in the storage of coal, the powers granted under this section shall extend only to reports and investigations covering the quantities of coal consumed by, the stocks of coal held by, and the kind of business engaged in. These reports are to be filed with the commission over regular monthly periods and the statements of investments and profits shall be required and compiled at least annually. The bill also provides that the Interstate Commerce Commission shall require and secure reports, from railroads on the ratings of mines for the purpose of distribution of coal cars and the percentage of coal-car rated requirements furnished, the loading, movement, reconsignment, and unloading of coal or coal cars, and other information relevant thereto. The Director of the Geological Survey shall continue the series of reports and bulletins concerning the coal industry heretofore published by him, that is, the annual reports on coal production, annual report on the movement of coal, etc., and shall from time to time publish special reports on subjects specified as he deems of value to Congress. He may call upon the Federal Trade Commission and the Interstate Commerce Commission to obtain for him such reports from owners, operators, dealers, consumers, and carriers by rail or water that he may deem necessary for the publication of these reports. He may also secure voluntary reports in so far as practicable on such subjects as the Federal Trade Commission and the Interstate Commerce Commission may mutually agree with the director. Section 7 of the bill gives the Federal Trade Commission the authority to have access to, for the purpose of examination and the right to copy any documentary evidence reported or being investigated. Upon request of the commission the district courts of the United States shall have jurisdiction to issue writs of mandamus commanding any operator or dealer to comply with the provisions of this Act. If any person shall refuse or neglect to testify or to produce documentary evidence in conjunction with the collecting of this data, he shall be fined and imprisoned for one year or both. If any officer or employe of the commission makes public any information obtained by him, without its authority, unless directed by a court, he shall be guilty of a misdemeanor and subject to a fine of not exceeding $5,000 or imprisonment for one year or both. Section 12 of the bill authorizes the Bureau of Mines to investigate from time time time methods and processes for storage and combustion of coal and the transmission of power from fuel centers, and to conduct such experiments and research as it may find advisable. They shall also investigate the desirability of prescribing inspections for various kinds and grades of coal. The Federal Trade Commission, the Interstate Commerce Commission and the Geological Survey shall co-operate and keep their analyses and compilations currently revised and available for immediate reference to be placed at the disposal of any private or public board engaged in the arbitration, or settlement of any labor dispute arising in any mine or group of mines from which coal is shipped. The Federal Trade Commission and the Interstate Commerce commission have the authority to make and enforce all rules and regulations necessary for carrying out the provisions of this Act. There is appropriated the sum of $10,000 each to the Director of the Geological Survey and the Interstate Commerce Commission and $25,000 to the Federal Trade Commission to defray the expenses.

S. 41. Introduced by Mr. Frelinghuysen; referred to the Committee on Interstate Commerce. (*Seasonable rates for the transportation of coal.*) Thirty days after the enactment of this amendment to the Interstate Commerce Act no carrier shall demand, collect, receive, or enforce, for the carriage of coal any joint rate which is greater or less than—

5 cents per ton more than the schedule base rate then in effect therefor for shipments made during August.

15 cents per ton more than such rate for shipments made during September,

25 cents per ton more than such rate for shipments made during October, November, and December, or 10 cents per ton more than such rate for shipments made during January, or which is greater or less than 10 cents per ton less than the schedule base rate then in effect therefor for shipments made during February,

25 cents per ton less than such rate for shipments made during March, April, and May,

15 cents per ton less than such rate for shipments made during June, or

5 cents per ton less than such rate for shipments made during July.

The Interstate Commerce Commission upon complaint is authorized to investigate and determine and prescribe what is a just, reasonable or proportionate joint rate.

H. R. 3720. Introduced by Mr. Rhodes; referred to the Committee on Mines and Mining. (*Government purchase of coal.*) The bill authorizes the Director of the United States Bureau of Mines to select and contract for all coal and other fuel required by any branch of the federal service. It will be the duty of the Director of the Bureau to make analyses and tests of coal and other fuels, and to make such investigations of fuel-burning equipment of the different branches of the federal service as will result in the greatest fuel economy. Each branch of the service shall furnish to the Director such information relating to its fuel-burning equipment, fuel consumption, and fuel use as may be requested by him. He is also authorized to contract for the purchase for the different branches of the federal service in advance of the availability of appropriations for the payment thereof but the contract shall not exceed the necessities of the current year. Each branch of the service shall pay in the United States Treasury an amount to be fixed by him, but in no case to exceed 5 cents per ton, for each ton of coal purchased, analyzed or tested, or 1 mill per barrel of fuel oil purchased or 1 mill per gallon of gasoline or kerosene purchased. The bill appropriates the sum of $250,000 for the enforcement of the act in any one fiscal year.

H. Res. 41. Introduced by Mr. Lambert; referred to the Committee on Interstate and Foreign Commerce. (*Report on coal.*) The resolution authorizes the Federal Trade Commission to make a survey of all coal-bearing lands in the United States and its possessions and to ascertain the present value of coal lands and mines, including the machinery and other equipment and make a report to the House of Representatives before December 1, 1921. The resolution appropriates $50,000

TARIFF

H. R. 2255. Introduced by Mr. Rhodes; referred to the Committee on Ways and Means. (*Lead.*) The bill imposes a tariff on lead-bearing ores, lead, and lead products, imported. Lead-bearing ores to bear a tariff of 1½ cents per pound; lead dross, bullion, pigs, bars, etc., 2 cents per pound and all other lead products or compounds 40 percent ad valorem.

H. R. 2256. Introduced by Mr. Rhodes; referred to the Committee on Ways and

Means. (*Barytes.*) This bill imposes a tariff on crude barytes ore of $\frac{3}{4}$ of 1 cent per pound; on ground barytes or barium sulphate, a duty of $1\frac{1}{4}$ cents per pound; on sodium sulphide crystals, a duty of $1\frac{1}{4}$ cents per pound; on barium sulphide a duty of $1\frac{1}{2}$ cents per pound; on barium carbonate, 2 cents per pound; on precipitated barium sulphate, 2 cents per pound; on barium hydrate, $2\frac{1}{2}$ cents per pound; on barium chloride, $2\frac{1}{2}$ cents per pound; on all lithopone, $2\frac{1}{2}$ cents per pound, on all concentrated sodium sulphide, $2\frac{1}{2}$ cents per pound; on barium nitrate, 5 cents per pound; on barium peroxide, 8 cents per pound; and on each and every other barium compound and barium chemical, a duty of 50 per cent ad valorem.

H. R. 2390. Introduced by Mr. Wason; referred to the Committee on Ways and Means. (*Granite, freestone, etc.*) A tariff of 75 percent ad valorem is imposed upon all importations of granite, freestone, sandstone, limestone and all other monumental or building stone, except marble, breccia and onyx. Upon unmanufactured or not dressed, hewn, or polished a tariff of 15 cents per cubic foot is imposed. The bill expressly repeals paragraph 99 of Schedule B of section 1 of the act to reduce tariff duties, approved October 3, 1913.

H. R. 2468. Introduced by Mr. Arentz; referred to the Committee on Ways and Means. (*Tungsten.*) The bill imposes a duty on tungsten-bearing ores and concentrates of $10 per unit of tungstic trioxide contained therein. A duty of nine-tenth of 1 cent per pound is imposed upon metallic tungsten, tungsten powder, ferro-tungsten, ferre-tungsten powder, scrap steel containing tungsten fit only to be manufactured, commercial tungstic acid, calcium tungstate, sodium tungstate, and all other salts of tungsten and other manufactured materials containing tungsten (except highspeed tungsten steel, and all alloy steels containing tungsten) containing a percentage or fraction thereof of tungsten. A duty of 35 percent ad valorem is imposed upon highspeed tungsten steel and all alloy steels containing tungsten. The provisions of the act shall not be deemed to repeal any tariff now existing upon any substance or materials mentioned herein.

REVENUE

H. R. 215. Introduced by Mr. Longworth; referred to the Committee of Ways and Means. (To reducet axes, to repeal war profits and excess profits tax, and simplify the Revenue Act.) The bill is termed the *Revenue Act of 1921.* It expressly repeals Section 200 of "personal service corporation" of the Act of 1918. Section 202 is amended to provide that in the case of property acquired by gift after December 31, 1920, it is taxable, the same basis that it would have in the hands of the donor or the last preceding owner by whom it was not acquired by gift. In the case of the sale or exchange of property acquired by gift after December 31, 1920, the entire amount received therefor shall be included in the gross income of the donee unless the donee submits with his return evidence satisfactory to the commissioner showing the basis in the hands of the last preceding owner. Section 202 is also amended to provide that when property is exchanged for other property, it shall be treated for the purpose of determining gain or loss as the equivalent of cash to the amount of its fair market value except when the market value of the property in the opinion of the commissioner can not be satisfactorily determined or when a person exchanges property for not less than 95 percent of the stock of a corporation organized to take over such property or when property is exchanged between corporations affiliated within the meaning of section 240; or when, in connection with the reorganization of a corporation, a corporation exchanges property with another corporation involved in such reorganization, or a person receives in place of stock or securities owned by him new stock or securities; or when real estate (including standing timber) is exchanged for real estate and it is shown to the satisfaction of the commissioner that the exchange was consummated for the purpose of consolidating or blocking out holdings of timber and not for purposes of profit other than the economies of management. A new subdivision is added at the end of Section 202 to read as follows: In the case of stock dividends paid after February 28, 1913, the cost to the taxpayer of each share of old and new stock shall be the cost of the old shares of stock divided by the total number of same. It provides that in cases in which the old and new shares of stock differ materially in character, the cost of the old shares shall be apportioned between the old and new shares as nearly as may be in proportion to the respective values of each at the time the new shares of stock were acquired. Section 205 is amended by adding a new subdivision which reads as follows: If a taxpayer makes a return for a fiscal year beginning in 1920 and ending in 1921, the tax under this title for such taxable year shall be the sum of the same proportion of a tax for the entire period, as in effect prior to the passage of the Revenue Act of 1921 for the calendar year 1920, which the portion of such period falling within the calendar year 1920 is of the entire period; and the same proportion of a tax for the entire period at the rates specified for the calendar year 1921 which the portion of such period falling within the calendar year 1921 is of the entire period.

Compensation received in any taxable year beginning after December 31, 1920, for personal service rendered by the taxpayer during a period of more than three years and gain derived in any such year from the sale of capital assets acquired more than three years prior to the date of sale shall be deemed to be extraordinary income and this income, less losses of the same class, shall be deemed to be extraordinary net income. The bill defines the term "capital assets" as property held by the taxpayer for consumption or use, but does not include any property, whether real, personal, or mixed, held by a dealer for sale. If the extraordinary income of a taxpayer amounts to more than 20 per cent of his entire gross income for the taxable year, it may be apportioned ratably to the years or parts thereof during which such service was rendered or such assets held. An amount thus ratably apportioned to any year shall be added to the other income of the taxpayer for such year and the tax redetermined upon the corrected amount at the rates applicable to such year, notwithstanding the provisions of section 206 or any other provision of the Act. A return of such extraordinary income shall be made at the time prescribed in subdivision A of section 227. If the additional taxes found upon such redetermination to be due for prior years are paid in the same proportionate amounts and at the same time installment dates fixed for the payment of taxes due upon income for the year in which such extraordinary income was received, no penalty or interest shall be added with respect to the time which has elapsed between such prior years and the date or dates of payment.

Section 211 is amended by adding at the end thereof a new subdivision as follows: For the calendar year 1921, and each calendar year thereafter, the rate upon the amount by which the net income exceeds $82,000 shall be 40 percent instead of the rates specified in subdivision A in respect thereto. Subdivision A of section 216 is amended by providing that the amount received as dividends from a corporation which is taxable under this title upon its net income. Section 218 is repealed. Section 220 is amended to provide that if any corporation is formed for the purpose of preventing the imposition of the surtax upon its stockholders through the medium of permitting its gain and profits to accumulate instead of being divided or distributed it shall not be subject to the tax imposed by section 230, but the stockholders thereof shall be subject to taxation in the same manner as the members of partnerships. The amounts distributed by such a corporation during its taxable year shall be accounted for by the distributees; and any portion of the net income remaining undistributed shall be accounted for by the stockholders except that the taxes imposed by title 3 shall be deducted from the net income of the corporation before the computation of the proportionate share of each stockholder. The fact that any corporation is a mere holding company, or that the gains are permitted to accumulate beyond the reasonable needs of the business, shall be prima facie evidence of a purpose to escape the surtax. Upon request by the commissioner or any collector, every corporation must forward to him a correct statement of the gains and profits and the names and addresses of the individuals or shareholders and the amounts that would be payable to each. It also provides that section 230 be amended by adding at the end thereof a new subdivision as follows: In addition to all other taxes imposed by this Act, there shall be levied, collected, and paid for the taxable year 1921 and each taxable year thereafter, upon the net income of every corporation, a surtax equal to 5 percent of the amount of the net income. If a corporation makes an income-tax return for a fiscal year beginning in 1920 and ending in 1921, the surtax for the portion of the year falling within the calendar year 1921 shall be an amount equivalent to the same proportion of the tax for the entire period computed under this title which the portion of such period falling within the calendar year 1921 is of the entire period. Subdivision 14 of section 231 is repealed. Subdivision A of Section 230 is amended to allow the following credits: The amount received as interest upon obligations of the United States and bonds issued by the War Finance Corporation, which is included in gross income under section 233; and the amount of any taxes imposed by title 3 for the same taxable year, provided that in the case of a corporation which makes return for a fiscal year beginning in 1917 and ending in 1918, in computing the tax as provided in subdivision A of Section 205, the tax computed for the entire period under title 2 of the Revenue Act of 1917 shall be credited against the net income computed for the entire period under title 1 of the Revenue Act of 1916, as amended by the Revenue Act of 1917, and under title 1 of the Revenue Act of 1917, and the tax computed for the entire period under title 3 of this Act at the rates prescribed for the calendar year 1918 shall be credited against the net income computed for the entire period under this title. Section 239 of such Act is amended by striking out of the first paragraph the words "and every personal-service corporation."

Subdivision D of Section 250 is amended by providing that the amount of tax due under any return made under this or prior acts shall be determined and assessed by the commissioner within five years after the return was made, except in the case of false or fraudulent returns with intent to evade the tax, or with the consent of both the commissioner and the taxpayer, or as otherwise provided in section 207, of subdivision A of section 214, or in paragraph 8 of subdivision A of section 234, or in the final settlement of losses and other deductions tentatively allowed by the commissioner pending a determination of the exact amount deductible; and no suit or proceeding for the collection of any tax shall be begun after the expiration of five years after the date when the return is made. In the case of such false or fraudulent returns, the amount of the tax due may be determined at any time after the return is filed, and the tax may be collected at any time after it becomes due. The bill specifically exempts 4 percent and 4½ percent Liberty Bonds from the graduated additional income taxes, commonly known as surtaxes, and excess-profits and war-profits taxes. These exemptions are in addition to section 7 of the Second Liberty Bond Act and in addition to exemptions provided in subdivision 3 of Section 1 of the supplement to the Second Liberty Bond Act in respect to bonds issued upon conversion of 3½ percent bonds, but shall be in lieu of the exemptions provided and free from the conditions and limitations imposed in subdivision 1 and 2 of section 1 of the Supplement to Second Liberty Bond Act and in section 2 of the Victory Liberty Loan Act. After January 1, 1921, title 3 of the Revenue Act of 1918 is repealed, except that it shall remain in force for the assessment and collection of all taxes which have accrued thereunder. If a corporation makes an income-tax return for a fiscal year beginning in 1920 and ending in 1921, the war-profits and excess-profits tax for the portion of the year falling within the calendar year 1920 shall be an amount equivalent to the same proportion of the tax for the entire period computed under title 3 of the Revenue Act of 1918. After July 1, 1921, section 630 and subdivisions a, c, and d of section 500 of the Revenue Act of 1918 are repealed, except that they shall stay in force for the assessment and collection of all taxes which have accrued thereunder.

S. 202. Introduced by Mr. Smoot; referred to the Committee on Finance. (*Sales Tax.*) The bill provides that in addition to all other taxes there shall be imposed a tax equivalent to one percent of the price for which all goods, wares or merchandise are sold or leased after July 1, 1921, the tax to be paid by the vendor or lessor. It does not, however, apply to sales and leases made during any year in which the total price for the taxable sales and leases does not exceed $6,000. The taxpayer is entitled to an annual exemption of $6,000 under the provisions of the Act. In any case where the full amount of exemption is not claimed in computing the tax due for the first quarter, the part not so claimed shall be deducted in computing the tax of the second quarter or succeeding quarters. The first quarter is defined as being July, August, and September; the second October, November, and December; the third January, February, and March and the fourth, April, May and June. The taxes imposed do not apply to sales or leases made by the United States Government, any foreign government, any state or territory, or political subdivision thereof or the District of Columbia, any mutual ditch or irrigation company, any hospital, or Army and Navy commissaries and canteens; or any corporation organized and operated exclusively for religious, charitable, scientific, or educational purposes, no part of the net earnings of which inures to the benefit of any private stockholder or individual. The taxes imposed by the bill do not apply to sales or leases or articles taxable under Title VI of VII or paragraphs 1, 2, 3, 12, and 20 of section 900 of the Revenue Act of 1918. With the approval of the Secretary the tax does not apply to articles sold or leased for export. In computing the taxes imposed by the bill no credit is allowed for any tax reimbursed or paid in any manner to any person in connection with any previous transaction in respect to which a tax is imposed by law. If the tax is not paid promptly when due there is added as a part of the tax a penalty of five percent, together with interest at the rate of one percent for each month overdue. The bill expressly repeals, after July 1, 1921, sections 628, 629, 630, 902 904, 905, 906, 907, and 900, except paragraphs 1, 2, 3, 12, and 20 of the Revenue Bill.

H. R. 236. Introduced by Mr. Bacharach; referred to the Committee on Ways and Means. (To reduce taxes and repeal war profits, excess-profits and certain other taxes.) (*Excess Profits.*) The bill provides that in computing the income tax in the case of a citizen or resident of the United States the rate upon the first $4,000 in excess of the credits provided in section 216 of the Revenue Act of 1918 shall be two percent. It also provides that the surtax shall not apply to net incomes below $7,000 per annum, the highest rate not to exceed 40 percent on amounts by which the net income does not exceed $90,000 per annum. A tax of 10 percent is levied for each taxable year upon the net income of every corporation and the credits allowed in section 236 of the Revenue Bill are repealed. The bill provides for the striking out of all of Title III of the Revenue Bill. Section 500 of the Revenue Act is amended by striking out the freight and express transportation tax and tax on insurance. The bill expressly provides for the striking out of section 630 of Title VI, all of Title VIII, section 904 and subdivision (2) of section 907 of Title IX and subdivisions 9 and 11 of section 1001 and section 1003 of Title X. It provides, in addition to all other taxes, the levying of a tax equivalent to 1 percent of the amount received upon the sale or transfer of tangible personal property, mechanical or electrical energy. It provides for a tax upon food, drink, lodgings, or the use or enjoyment of services, privileges or facilities, granted by persons operating or conducting an inn, tavern, hotel, restaurant, cafe, eating house, garage, etc., the tax to be paid by the person receiving such amount. The taxes imposed by this section shall not apply to the first $24,000 of the otherwise taxable amounts received, prorated monthly. In addition to all other taxes the bill provides for a tax of 10 percent upon the undistributed earnings of all corporations.

H. R. 229. Introduced by Mr. Burroughs; referred to the Committee on Ways and Means. This bill amends section 204 (b) of the Revenue Bill by providing that if upon satisfactory evidence it appears that any taxpayer has sustained a net loss, such loss may be deducted from the net income of the taxpayer for the preceding taxable year; and the taxes imposed by this title and Title III for such preceding taxable year shall be redetermined accordingly. Any amount found to be due the taxpayer upon the basis of such redetermination shall be refunded. In case the net loss is in excess of the net income for the preceding taxable year under regulations prescribed by the commissioner with the approval of the Secretary it may be allowed as a deduction in computing the net income for the succeeding taxable year. Section 214 of the Revenue Bill is amended to provide that at the time of filing return for any taxable year a taxpayer may file a claim in abatement based on the fact that he has sustained a substantial loss. In such case payment of the amount of the tax covered by such claim shall not be reqired until the claim is decided, but the taxpayer shall accompany his claim with a bond in double the amount of the tax covered by the claim. If any part of the claim is disallowed, the remainder of the tax due shall, on notice and demand by the collector, be paid by the taxpayer with interest at the rate of 1 percent per month from the time the tax would have been due had no such claim been filed.

H. R. 2368. Introduced by Mr. Vaile; referred to the Committee on Ways and Means. This bill amends section 1001 of the Revenue Act by providing that on and after January 1, 1919, there shall be levied, collected, and paid annually the following special taxes: brokers shall pay $50; if he is a member of a stock exchange, produce exchange, board of trade he shall pay an additional amount of $100 or $150 according to the amount he has paid for his seat on the exchange. Pawnbrokers shall gay $100, ship brokers $50, customhouse brokers $50. Proprietors of theatres, museums, concert halls, etc., having a capacity of not more than 250 shall pay $50, the scale rising slightly until reaching the capacity of 800 when they shall pay a tax of $200. Various taxes are imposed upon proprietors of circuses, public exhibitions or shows, bowling alleys and billiard rooms, shooting galleries, riding academies, persons carrying on the business of operating or renting passenger automobiles, persons carrying on the business of a brewer, distiller, liquor dealer, etc. The bill very carefully defines what constitutes each of the titles.

H. R. 2226. Introduced by Mr. Mott; referred to the Committee on Ways and Means. (Amending the Revenue Act and establishing a *general sales tax*.) This bill repeals the war profits and excess profits tax, the tax on nonalcoholic beverages, etc., and provides for a tax on tangible property, patents, trademarks, copyrights, good will, franchises, etc., bonds, debentures, certificates indebtedness, etc., shares of certificates of stock, etc., of one percent of the price for which sold. A tax of one percent of the amount received is imposed upon the loaning of money or the discounting of commercial paper, etc. The bill expressly provides that the act does not apply to sales made or amounts received during any month in which the taxable amounts received do not exceed $200.00.

H. R. 29. Introduced by Mr. Gould; referred to the Committee on Ways and Means. (Amending the Revenue Act.) The bill provides that paragraph (11) of subdivision (a) of section 214 of the Revenue Act of 1918, approved February 24, 1919, be amended to read as follows: Contributions or gifts made within the taxable year to corporations organized and operated exclusively for religious, charitable, scientific, educational, patriotic, or memorial purposes, or for the prevention of cruelty to children or animals, no part of the net earnings of which inures to the benefit of any private stockholder or individual, or to the special fund for vocational rehabilitation authorized by section 7 of the Vocational Rehabilitation Act, to an amount not in excess of 15 percent of the taxpayer's net income as computed without the benefit of this paragraph. Such contributions or gifts shall be allowable as deductions only if verified under rules and regulations prescribed by the commissioner, with the approval of the Secretary. In case of a non-resident alien individual this deduction shall be allowed only as to contributions or gifts made to domestic corporations, or to such vocational rehabilitation fund. This act shall take effect as of January 1, 1920.

H. R. 256. Introduced by Mr. Griffin; referred to the Committee on Ways and Means. The bill provides that section 211 (a) of the Revenue Act, approved February 24, 1919, be amended to increase the surtax upon individual incomes of $100,000 and upward, as follows:

55 percent of net income exceeding $100,000 and not over $150,000.

60 percent of net income exceeding $150,000 and not over $200,000.

70 percent of net income exceeding $200,000 and not over $300,000.

80 percent of net income exceeding $300,000 and not over $400,000.

90 percent of net income exceeding $400,000 and not over $500,000.

100 percent of net income exceeding $500.000.

Section 2 amends the Revenue Act, approved February 24, 1919, by adding a new section, following section 301B which reads as follows: In lieu of the tax imposed by Title III of the Act, but in addition to the other taxes imposed there shall be levied, collected, and paid for the taxable year 1920 and for each taxable year thereafter upon the net income of every corporation a surtax to be computed as follows: After allowing the exemption for in section 312 of the Act, namely, $3,000, to domestic corporations only, plus an amount equal to 8 percent of the invested capital for the taxable year, the net income of all corporations shall be subject to the same surtax as the incomes of individuals, as provided in section 211A of the Act as herein amended. All acts and parts of acts inconsistent with the provisions of this Act are repealed.

WAR MINERALS

S. 843. Introduced by Mr. Shortridge; referred to the Committee on Mines and Mining. The bill amends section 5 of the Act approved March 2, 1919, entitled "An Act to provided relief in cases of contracts connected with the prosecution of the war and for other purposes" by adding to the first paragraph of section 5 the following tipulation: All claimants who, in response to any personal, written, or published request, demand, solicitation, or appeal from any of the Government agencies mentioned in the Act, in good faith expended money in producing or preparing to produce any of the ores or minerals named therein and have heretofore filed their claims within the time and in the manner prescribed shall be reimbursed such net losses as they may have been found to have incurred and are in justice and equity entitled to from the appropriation in the Act, and that the unexpended portion thereof be continued available for the purpose named above until all claims shall be finally settled or disposed of.

H. R. 3735. Introduced by Mr. Hayden; referred to the Committee on Mines and Mining. The bill provides that all claimants who, in response to any personal, written, or published request, demand, solicitation, or appeal from any of the Government agencies mentioned in section 5 of the Act approved March 2, 1919, entitled, "An Act to provide relief in cases of contracts connected with the prosecution of the war, and for other purposes," and who in good faith expended money in producing or preparing to produce manganese, chrome, pyrites, or tungsten, and have heretofore filed their claims within the time and in the manner prescribed, shall be paid such net losses as they have incurred and are in justice and equity entitled as may be determined by the Secretary of the Interior, and the unexpended balance of the appropriation made shall remain available until all such claims shall be finally settled or disposed of.

H. R. 2450. Introdueed by Mr. Sinnott; referred to the Committee on Mines and Mining. The bill provides that section 5 of the Act approved March 2, 1919, entitled "An Act to provide relief in cases of contracts connected with the prosecution of the war, and for other purpose," be amended to read as follows: "That all claimants who in response to any personal, written, or published request, demand, solicitation, or appeal from any of the Government agencies mentioned in said Act in good faith expended money in producing or preparing to produce any of the ores or minerals named therein and heretofore filed their claims within the time and in the manner prescribed by said Act, shall be reimbursed such net losses as they may have been found to have incurred and are in justice and equity entitled to from the appropriation in said Act, and that the unexpended portion of the appropriation carried in said Act be continued available for the purposes named above until all claims in said Act shall be finally settled or disposed of.

LABOR

H. R. 110. Introduced by Mr. Mason; referred to the Committee on Ways and Means. (Amending the revenue laws of the United States.) The bill provides that hereafter for all persons employed in any mine or quarry in the United States under the age of sixteen years the employer shall pay to the United States $2 per day for each day for each person so employed. For all persons employed in any mill, cannery, work shop, factory, or manufacturing establishment situate in the United States, under the age of fourteen years, the employer shall pay to the United States of America $2 per day for each person so employed.

S. Res. 52. Introduced by Mr. Hayden; referred to the Committee on Education and Labor. The resolution reads as follows: "Whereas a temporary decrease in industrial activity has deprived many persons of employment; and it is regarded as sound government policy to prosecute public works during periods when labor and material are not fully absorbed by private industry and are therefore in plentiful supply; and Congress has made appropriations now availbale for the execution of certain public works; and the immediate prosecution of such public works will give employment to large numbers of persons now seeking employment not only directly on the public works but indirectly upon the manufacture of the materials required. It is therefore resolved that the President of the United States be requested, if not incompatible with the public interests, to take measures that the public works of the United States for which appropriations are now available may be expedited and actively prosecuted during the present period of diminished industrial activity.

S. 846. Introduced by Mr. Kenyon; referred to the Committee on Education and Labor. The bill authorizes the Secretary of the Interior through the Bureau of Education to co-operate with the several states in the education of illiterates or other persons unable to speak, read, or write the Engligh language by appropriating $5,000,000 for the year ending June 30, 1920, and annually thereafter until the end of the fiscal year ending June 30, 1923, the sum of $12,500,000 and an additional sum equal to the balance unexpended of the appropriation herein provided for the last preceding fiscal year. Five hundred thousand dollars of the appropriation is to be used for the publication of periodicals devoted to Americanization problems; for aiding in the correlation of aims and work carried on by local bodies, private individuals, and organizations; for studies and reports through the Bureau of Education, etc. The balance of the amount appropriated is to be apportioned to the several states in the ratio which the number of resident illiterates and other persons unable to understand English language, sixteen years of age and over, bears to the number of resident illiterates. The total sum allotted to any state shall not be less than $5,000 for any fiscal year. Proper safeguarding is provided for in the matter of the expenditure of the money by the states.

OIL SHALE

H. R. 2348. Introduced by Mr. Taylor of Colorado; referred to the Committee on Mines and Mining. (Authorizing investigation of oil shale to determine practicability of utilization as commercial product.) The bill authorizes the Secretary of the Interior to make experiments and investigations, through the Bureau of Mines, of oil shale, to determine the commercial and economic practicability of its utilization as a commercial product; and there is hereby appropriated, out of the funds in the Treasury not otherwise appropriated, the sum of $140,000, or so much thereof as may be needed; to conduct such experiments and investigations, including personal services in the District of Columbia and elsewhere, and including supplies, equipment, expenses of traveling and subsistence, and for every other expense incident to this work.

The Secretary of the Interior is authorized and directed to sell or otherwise dispose of any property, plant, or machinery purchased or required under the provisions of this Act as soon as the experiments and investigations hereby authorized have been concluded, and report the results of such experiments and investigations to Congress.

PUBLIC LANDS

S. 733. Introduced by Mr. Myers; referred to the Committee on Public Lands. (Amending the Act approved June 22, 1910, which provides for *agricultural entries on coal lands*.) The bill is so amended as to provide that unreserved public lands of the United States, exclusive of Alaska, which have been withdrawn or classified as coal lands, whenever such entry or withdrawal shall be made with a view of obtaining or passing title with a reservation to the United States of the coal in the lands and of the right to prospect for, mine, and remove same, but no desert entry made shall contain more than one hundred and sixty acres. Those who have so classified the land may perfect the same under the provisions of the law under which the claims were initiated but shall receive a limited patent which is provided for by the Act. Special rules are provided for the satisfactory proof in compliance with the provisions of the law. The Interior Department is vested with the authority to carry out the provisions of the Act.

ANNUAL ASSESSMENT WORK

H. R. 2919. Introduced by Mr. Sutherland; referred to the Committee on Territories. The bill provides that annual assessment on mining claims in the territory of Alaska may be performed as follows: During the first year and until patent has been issued therefor at least $100 worth of work shall be performed. The owner or locator in lieu of such labor and improvement may pay annually to the Treasurer of Alaska the sum of $100 to be expended on public roads, trails, bridges, etc., in the vicinity of the mining claim in question. The owner of the claim may perform two or not more than three years of assessment work in one year and upon proof of such expenditure, he shall not be required to do any assessment work thereon for the succeeding year, but for no longer than three years.

IMMIGRATION

H. R. 2171. Introduced by Mr. Lea; referred to the Committee on Immigration and Naturalization. Amending Immigration Act by providing that all feeble-minded persons, subject to insanity or otherwise, persons with chronic alcoholism, paupers, etc., be excluded from entering the United States; also persons who have been convicted of or admit having committed a felony, polygamists, anarchists, or persons who believe in or advocate the overthrow by force or violence of the government, or who disbelieve in or are opposed to organized government, or persons who are members of or affiliated with any organization entertaining and teaching disbelief in or opposition to organized government; persons who are natives of islands not possessed by the United States, lying wholly between the twenty-first and fifty-first parallels of latitude north and other undesirable citizens are prohibited from entering under the provisions of this Act.

BOLSHEVIKI

H. R. 2488. Introduced by Mr. Upshaw; referred to the Committee on Post Office and Post Roads. The bill provides that from and after six months from the date of the passage of the Act it shall be unlawful for any individual, firm, association, corporation, or any agent of any firm, etc., to circulate through the mails any paper, magazine, pamphlet, or periodical published in the United States in any foreign language, unless said publieation shall carry in parallel column a full and accurate translation in the English language. A fine of $5,000 and one year's imprisonment for each such offense is imposed for violation of this Act.

H. R. 2467. Introduced by Mr. Upshaw, referred to the Committee on Judiciary. The bill provides that from and after the passage of this Act it shall be unlawful for any organization of whatever nature to place in its name or title, or in the caption declaring its purposes, the name of any foreign country before the word "American" and that each member of any organization violating this Act shall be subject to a fine of $1,000 and to imprisonment for one year.

HIGH COMMISSION

S. 631. Introduced by Mr. Fletcher; referred to the Committee on Judiciary. (Amending the Act providing for *International High Commission*.) The bill provides that the Act approved February 7, 1916, entitled "An Act to provide for the maintenance of the United States section of the International High Commission" be amended to read as follows: There is hereby established in the United States section of the Inter-American High Commission, hereafter to be known as the United States section, to consist of the Secretary of the Treasury, who shall be chairman, and eight other persons to be appointed by the President as members of the United States section. Each person so appointed shall serve for five years and receive a yearly salary of $12 and his actual and necessary expenses arising from attendance at meetings, etc. This section shall co-operate with the other sections of the Inter-American High Commission in bringing about between the Republics of North, Central and South America, and the West Indies as substantial uniformity in commercial law and practice, and in fiscal and administrative regulations, particularly as concerns bills of exchange, checks, commercial paper, and bills of lading; the classification of merchandise; commercial and vital statistics; customs regulations, consular documents, and port charges; legislation concerning trade-marks, patents and copyrights; rates of postage and charges for mail orders and parcel post; facilities of communication and transportation; the establishment of an international gold clearance fund; the establishment of an inter-American tribunal for the adjustment of commercial or financial disputes between two or more American countries; and the development of legal procedure for the arbitral settlement of commercial disputes. The United States section shall not be concerned with the promotion of trade, or with matters essentially diplomatic or political in character. There shall be a secretary and assistant secretary of the United States section, who shall be appointed by the Secretary of the Treasury and receive annual salaries of $5,000 and $4,500 respectively. The Secretary is authorized to employ and fix the compensation of such technical and clerical assistants as he may find necessary for the fulfillment of the objects above enumerated. This Act shall take effect July 1, 1920.

BUREAU OF MINES MOVIES

TWO NEW PICTURE films are ready for distribution by the Bureau of Mines. "A Dollar Saved is a Dollar Earned" is the title of one of them, and "The Sory of Ingot Iron" is the name of the other. The former was produced in co-operation with the National Association of Pipe Covering Industries, and the latter in co-operation with the American Rolling Mills Company of Middletown, Ohio. Requests for these pictures should be directed to the Pittsburgh Station of the Bureau of Mines.

OIL ATHLETES SEEK TAX RELIEF

THE GARGOYLE Athletic and Recreation Association, comprising 800 members of the Vacuum Oil Company of Rochester, N.Y., has petitioned Congress for repeal of the 10 percent tax on athletic goods.

ELECTRIC POWER aggregating thirty-nine billion kilowatt-hours was produced by public utility companies in 1919, according to calculations just completed and announced by the U. S. Geological Survey. Of this power 62 percent was produced by fuel and 38 percent by water. The fuel consumed in this manner consisted of thirty-five million tons of coal, eleven million barrels of oil and 21.7 billion cubic feet of gas.

CO-OPERATIVE SAFETY HEAD LEAVES TO INAUGURATE WORK

C. LORIMER COLBURN, who represents the United States Bureau of Mines in co-operative safety work with the National Safety Council, left Washington April 20 for Wilkes-Barre, Pa. From there he went to Pittsburgh, and on May 1 will arrive in Chicago to spend three days familiarizing himself with the work of the National Safety Council. From Chicago he will go to Houghton, Michigan, to begin field work, and from Houghton he will go to Hibbing, Minn. He expects to stay out in the field until early in June, when he will return to Washington for a brief stay.

LEAD AND ZINC PROBLEMS TO BE STUDIED

K. BAUMGARTEN has been appointed Mining Engineer of the United States Bureau of Mines, and will be attached to the Mississippi Valley Station at St. Louis. Mr. Baumgarten has had fourteen years experience in the United States and Mexico. During the last eighteen months he has been an examiner for the War Minerals Relief Commission in Washington.

Research work for determination of means for securing increased efficiency in zinc and lead mining operations is to be undertaken by the Bureau of Mines through its Mississippi Valley Station at St. Louis. It is hoped that depressed conditions in the metal markets will be met to a degree by decreased production costs resulting from the activities which will be inaugurated in the near future. Mr. Baumgarten has been assigned to the St. Louis station in connection with this work. Special attention will be paid to the lead and zinc operations at Joplin, Mo., it is understood.

U. S. CURRENCY FOR VIRGIN ISLANDS

IN a letter to Congress, Secretary of the Navy Denby recommends establishment of U. S. coinage and currency as the legal standard of value in the Virgin Islands, saying this legislation is necessitated by the increasing intimacy and mutual relationship, especially commercial, between the United States and these islands. The proposed legislation has the approval of the director of the mint and the Treasury Department. The legislation is urged in the interest of the successful administration of the Virgin Islands, their prosperity and their closer financial and commercial relations with the United States.

JAPANESE COAL MINE MAGNATE VISITS IN WASHINGTON

VISCOUNT Tadishira Inouye, who is the head of the Fusum Coal Mines near Mukden, and a member of the House of Peers of Japan, has been in Washington during the last fortnight in conference with officials of the Bureau of Mines and the Geological Survey. He was entertained at the Cosmos Club by H. Foster Bain, director of the Bureau of Mines. Guests included prominent engineers and officials of the Bureau and the Survey.

HOOVER LEADS ENGINEERS

THE AMERICAN Association of Engineers has been conducting an investigation to find out just who are the "most highly respected" engineers in the various branches of the profession. Ballots were submitted to the deans of engineering and scientific schools. The last "returns" showed George W. Goethals leading the civil engineers, John A. Brashear, the mechanical engineers, C. P. Steinmetz, the electrical engineers, and Secretary of Commerce Herbert Hoover the mining engineers. The vote for mining engineers stood as follows: Herbert C. Hoover, 32; John H. Hammond, 29; J. E. Spurr, 34; J. Parke Channing, 18; Daniel C. Jackling, 9; Pope Yeatman, 6; L. D. Rickets, 5; Robert Peele, 5; Horace Winchell, 3; S. J. Jennings, 2.

COMMISSION ON OIL DISPUTE.—A proposal that the United States appoint a commissioner to confer with the British Petroleum Commission looking to adjustment of the dispute between the United States and Great Britain over Mesopotamia oil lands is being considered by the State Department.

SECRETARY DAVIS WANTS STRONGER LABOR ADJUSTMENT LAW

SECRETARY of Labor Davis advocates amendment of the law creating the division of conciliation of his department so as to make it more effective in averting and settling labor disputes. He holds there should be more "teeth" in the law so as to compel both sides to abide by terms of agreements, and that both sides should be compelled to discuss disputes before the beginning of a strike, in which a representative of the department would participate.

TALLMAN AS MINING LAWYER.—Clay Tallman of Nevada, former Land Office Commissioner, has been admitted to practice before the United States Supreme Court. He will specialize in mining cases.

OIL LAND SUIT.—The McKittrick Oil Company has asked the Supreme Court to review the decision of the district court of appeals of California which gave title to the Southern Pacific Railroad of oil lands in Kern County, Cal., alleged to be the property of the oil company.

SALE OF OIL LANDS AUTHORIZED BY INTERIOR DEPARTMENT

THE INTERIOR DEPARTMENT will sell 6,000 acres of land in the Salt Creek field at Douglas, Wyoming, June 15, a maximum of 640 acres being set for each purchaser. The land will be sold to those offering the highest cash bonuses. The land is divided into tracts of 164 acres. Royalties range from 25 to 33 and one-third percent, depending upon proximity to the center of production.

CONDUCTED BY JOHN BOYLE, JR.

1,368,618—*H. B. Faber*, New York, N. Y., Feb. 15, 1921.

METALLURGICAL AND CHEMICAL FILTER of the rotary suction type and provided with means for directing the filtrate and the wash water to different points, and means for providing a counter pressure in excess of the pressure medium to lift the solids from successive portions of the filter without relieving the pressure on the filtering portions.

1,368,775—*W. G. Vreeland*, Chattanooga, Tenn., Feb. 15, 1921. Assigned to Lucey Manufacturing Corporation of Tennessee.

CROWN BLOCK FOR WELL DRILLING MACHINES.

1,368,815—*J. F. McNeil*, Clifton, Arizona, Feb. 15, 1921.

CONCENTRATING TABLE in which the invention is directed to the disposition and arrangement of several series of riffles.

1,368,901—*F. Cushman*, Seattle, Washington, Feb. 15, 1921.

ORE SEPARATOR.

1,369,049—*M. W. Quick*, Titusville, Pa., Feb. 22, 1921.

METHOD AND APPARATUS FOR OPERATING OIL WELLS which consists in interposing resistance to the escape of vapors and varying said resistance by alternately increasing and reducing the same, thereby accumulating a maximum tension in the well nearer the other tensions of the vapors of said well than zero tension, and the variation having a range of less than 50% of the ultimate tension of the vapors in the well.

1,369,054—*W. A. Scott*, Oak Park, Ill., Feb. 22, 1921.

FLOTATION PROCESS for ores containing acid consuming ingredients, the operation of reducing the ore to a free flowing pulp and introducing into said pulp a bubble forming gas in admixture with an acid.

1,369,175—*N. P. Holmes*, Claremont, N.H., Feb. 22, 1921. Assigned to Jeffrey Manufacturing Company.

MINING MACHINE TRUCK comprising improved truck driving means and, more especially, improved clutch and brake mechanism therefor, and improved controlling mechanism for said clutch and brake mechanisms, whereby the connections of the truck wheels to a source of power, as for instance, the motor of a mining machine mounted thereon, as well as the speed of rotation of these wheels when the truck is moving along its track, may be regulated in an improved manner.

1,369,350—*W. Ostwald*, Grossboten, Saxony, Germany. Assigned to The Chemical Foundation, Feb. 22, 1921.

METHOD OF AND APPARATUS FOR UTILIZING MINE WASTE BY MEANS OF THE HEAT OF DUMP HEAPS comprising adding chlorin containing compound to the waste, liberating through the utilization of said heat, metals, and metalloids in the form of chlorid, and recovering the same by condensation.

1,368,521—*M. S. Moore*, Glasgow, Scotland, Feb. 15, 1921. Assigned to Mavor and Coulson Ltd.

CUTTER CHAIN MINING MACHINE comprising a gear casing formed with an internal circular channel at its base the axis of which channel is vertical, which gear casing is directed transversely in a plane containing the axis of the channel and at right angles or thereabout to the power shaft of the motor, one part of the gear casing being permanently fixed to the body of the machine and the other part adapted to be detachably secured to the fixed part, a base structure having a circular rim adapted to be mounted with its rim fitting within the channel of the gear casing, a chain driving sprocket mounted upon a driving axle extending through the base structure, and a cutter chain member, the plane of which is below the base structure, mounted capable of angular adjustment about a vertical axis situated in the area contained within the circumference of the base structure.

1,369,891—*E. P. Halliburton*, New Wilson, Okla., March 1.

CEMENTING OIL WELLS comprising retaining means adapted to be placed in the casing for retaining a body of cement, forcing said retaining means downwardly and lineal measuring means for determining the depth to which the body of cement has been forced.

1,369,898 and 1,369,899—*J. W. McGalliard*, Los Angeles, Calif., March 1.

CONCENTRATING TABLE.

1,370,357—*C. L. Perkins* and *R. E. Sayre*, Pittsburgh, Pa., assigned to Metals Recovery Co., March 1.

FLOTATION PROCESS comprising adding to the pulp a small amount of terpin hydrate.

1,370,366—*R. E. Sayre*, Pittsburgh, Pa., assigned to Metals Recovery Co., March 1.

FLOTATION PROCESS comprising adding to the pulp a small amount of dehydrate alcohol.

1,370,367—*R. E. Sayre*, Pittsburgh, Pa., assigned to Metals Recovery Co., March 1.

FLOTATION PROCESS comprising adding to the pulp a small amount of thio-aldehyde compound.

1,370,620—*F. R. Willson*, Columbus, Ohio, assigned to Jeffrey Mfg. Co., March 8.

ROTARY SCREEN. This invention relates to improvements in revolving screens, and particularly to screens having the screen element formed of parallel rods, wires or bars arranged in, or approximately in, planes transverse, to the axis. Heretofore mechanisms of this class have been generally made with a supporting frame and a screening element formed of fabric produced by interweaving or interlacing wire of one degree of fineness or another; this woven wire element either being carried as an integral sheet entirely around the axis and stretched upon its frame or being cut into sections, and the sections severally secured to the frame upon arcs or chords of a cylinder. The interweaving or interlacing of the strand wires and the mesh wires forms apertures, generally square, sometimes smaller, sometimes larger, and always surrounded by wires or rods. Many materials which are delivered to the screen are of such nature that particles or masses lodge in these apertures and clog them because of their adhering to, or being caught between, the cross wires or rods. Again, when abrasive materials are being treated in the screens, the wire mesh sections rapidly wear away and renewed screen devices are required. If the rods or wires are interwoven or interlaced, relatively large sections must be taken out and others substituted.

The object here is to provide a screen which will have no obstruction along lines approximately parallel to the axis, and will permit an easy and uninterrupted flow or sliding along lines around the periphery; and which will have the screen elements, proper, formed in short rod or wire sections which can be individually removed or inserted in the case of wear, breaking or bending.

1,370,700—*B. A. Mitchell* and *F. G. Janney*, Garfield, Utah, March 8.

ORE GRINDING MILL of the class commonly known as ball mills and its object is to provide forms for the shells and linings of said mills.

In the present invention the shell is composed of interlocking sections which inclose a hollow cylindrical lining in a single piece. This lining bears at one end upon a grate to hold and lock said grate to its seat over an outlet opening in the shell. At the other end it bears upon the opposite head of the shell, said bearing taking place through angularly disposed surfaces adapted to crowd the lining endwise and against the grate whenever any rotation of said lining in either direction takes place within the shell. By this means both the grate and lining are automatically locked rigidly in place.

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FOREIGN TRADE AND DOMESTIC INDUSTRY

DECREASING EXPORTS and increasing imports add to the problems of keeping the national in- industrial machinery in complete operation. Altogether the larger part of American production is consumed by the American people. Only a small percentage of the total output is ever shipped to foreign countries. An investigation made by the writer a few years ago, indicated that business conditions in this country are usually considered unsatisfactory when we are shipping but 5 percent of our total production to foreign markets; when we are shipping 7½ percent of total production to foreign markets business is fairly good; when we are shipping 10 percent to foreign markets business is brisk, all productive machinery is in operation and every man desiring work is employed at good wages. It is the business of statesmanship to make it possible for this condition always to exist.

Why are exports decreasing and imports increasing in all commodities and why are imports of gold continually piling up a gold supply which is needed by foreign nations to maintain their credit and to furnish to them the machinery of industrial life?

We are advised to save and work, and yet even the carrying out of this advice creates or is likely to create unsatisfactory conditions. We may be saving too much; so much as to shut off the demand which must continue if all desiring work are to be employed.

Before the war this country owed to European countries about three quarters of a billion dollars, now European countries owe us in excess of ten billion dollars. Before the war we had in this country approximately one-fifth of the world's total gold supply, now we have approximately one-third of the world's gold. The world needs our production more than ever before but lacks the credit with which to purchase.

What is the remedy?

A most comprehensive remedy was proposed by Secretary of Commerce Herbert Hoover in an address before the United States Chamber of Commerce at Atlantic City, last month. The suggestion is as follows: "It is economically feasible to continue a large favorable balance of trade, provided we are prepared to reinvest our balance in long time credit in the creation of reproductive enterprises abroad."

This suggestion acted upon in a broad, comprehensive way by the American people will solve the problem while it will continually add to the wealth of this country. We are not without successful precedents upon which to base this conclusion. The General Electric Company has furnished perhaps the most notable example of the advantages of this method.

Notwithstanding the present business depression, the United States is the great wealthy nation of the world. It has a wealth of credit and a prepondering supply of gold which is the basis of credit in foreign business transactions. It may either develop business activities in foreign countries through foreign corporations organized for that purpose, or it may purchase the securities of foreign business enterprises already in operation and thus furnish the capital through which purchasers of our exports may be financed. The latter plan would give to this country reasonable security for the investment with interest thereon. The former plan would make more certain the safety of the investment, would be equally certain to pay the interest charge upon the capital and also insure the larger profits which every well conducted business enterprise usually creates, as well as to furnish a certain market for American machinery and supplies which could not otherwise be assured. The War Finance Corporation is one of the agencies through which much assistance can be given to such enterprises. The proposed hundred million dollars finance corporation under the provisions of the Edge law now in process of organization offers additional assurance that plans of this kind through its assistance might be carried out.

We are not without precedent for the success of national movements of this character. The wonderful industrial growth and the comprehensive foreign influence of Germany at the beginning of the war is sufficient proof of the advantage of investment in foreign business enterprises and this is more particularly true as it relates to the present industrial condition of the United States. An outlet for our surplus productive capacity is the crying need of the business hour. Let us emphasize Secretary Hoover's proposal of the means by which this condition may be made to prevail: ***"It is economically feasible to continue a large favorable balance of trade, provided we are prepared to reinvest our balance in long time credit in the creation of reproductive enterprises abroad."***

OUR FOREIGN DIVISION

ONE OF THE PURPOSES for which the Foreign Division of the American Mining Congress has been created is to lend assistance in the process of "the creation of reproductive enterprises abroad."

To the extent that this work is successful it will make employment for American engineers, American business managers, and create an exceptional market for American machinery and supplies and it will give to the American people the control of business enterprises which will largely assist in the maintenance of a favorable trade balance. At the same time it will be able to keep American mining men fully posted as to the developments in foreign countries, the possible market for mineral products abroad and the extent to which foreign competition may interfere with home production.

THE OPEN SHOP

CONTINUED REITERATION of the statement that advocates of the open shop do not mean an open shop but a shop closed against organized labor will in time, if not denied, create in the public mind a suspicion that such a thing as a real open shop is an impossibility.

As a matter of fact such a conclusion is entirely without foundation. Open shops do exist, have existed and always will exist in many lines of industry. Real open shops, in which no applicant for a position is asked whether he is or is not a member of a labor union; shops in which members of a union may work side by side with non-members without any discrimination either against each other or by the employers against either.

The open shop system has nothing to do with hours of service, wages paid, or the conditions surrounding employment. It does not prevent any man from leaving his employment at will. It does not prevent the employer from terminating the service of those who are either inefficient, careless or insubordinate. It gives ample opportunity for the creation of such discipline and the exercise of such management as are essential to efficient production.

The American people, those who have nothing to do with industry and those who are directly connected with industry; employers and employes alike, are all consumers. It is therefore fair in the discussion of a public question which affects every citizen of the country that the interests of the great majority shall receive first consideration.

Efficiency means larger and therefore cheaper production. Large and cheap production means an overstocked market and lower prices which in turn means increased consumption. Continuous employment for all workers with proper equipment and intelligent direction means an ample supply of the necessities of life and an increasing amount of life's luxuries for all.

The closed shop means inefficiency, ineffective direction, and restricted production and a limitation of luxuries to the masses.

The demand of American people for the open shop will be intensified by every misstatement of the principle involved.

WHY PERSECUTE THE COAL INDUSTRY

CONGRESS is again considering bills for the special regulation of the coal industry. The public clamor for legislation is based upon an entire misapprehension of the intricate machinery which must function simultaneously and in consecutive order if coal is to be available at all times and in all places where needed.

Other lines of industry, equally important to the public welfare, are not legislated upon whenever these industries fail to furnish the proper supply. No one has seemed to believe that the fruit industry should be subject to special legislative requirements. In fact the fruit industry has been permitted in more or less direct violation of the requirements of the Sherman Anti-Trust Law to organize itself so as to more satisfactorily meet the public demand. Fruit growers associations control total output, allocate to the proper market, see to it that one city does not receive ten times the amount of fruit which it can possibly consume while another city is left without a proper supply. These associations estimate the amount of fruit which a business center can consume and as nearly as may be possible allocate to that point the required amount. Incidentally the average price of fruit to the retailer is less than when this business was handled in a haphazard manner, when dealers in the city with an over-supply were glad to dispose of surplus stocks at less than cost in order to prevent the total loss of a perishable commodity while some other city at the same time might be entirely without the supply which its market demanded. It is true that in the over-supplied city fruit was sold cheaper, very much cheaper than it would have been had the supply been properly allocated. On the other hand it is true that the other city is not able to supply its needs at any price. If we grant that the average price of fruit is higher than was the cut-throat price in an overstocked market in the haphazard days, yet we insist that continuous supply of a necessity justifies a higher price than can be secured in an overstocked market and therefore that the California Fruit Growers Association has thus far fully justified its existence. Had the coal business been authorized to function in like manner, coal operators would have been in position to take a fair profit upon their operation, useless operations would have been discontinued, the mines could have operated more continuously and therefore more economically and every section of the country would have been supplied with coal at a fair price and at all times. Because the coal industry has not been allowed to co-operate in meeting the public demand it is being singled out for special repression and regulation. Because it has been made impossible for coal operators to co-operate in serving the public need, we find an intolerable condition existing which is being made more intolerable by repressive legislation, by public investigation and continuous harping of the public press.

During the war the enormous production required to satisfy military needs was made possible by enforced co-operation in open violation of every principle of the Sherman Anti-Trust Law. It would seem wise that we benefit by this experience, profit by the good, discard the bad and make conditions available through which not only in coal, but in every industry, there shall be the highest efficiency in production, transportation and distribution as well as the greatest conservation of natural resourses which once wasted can never be replaced.

LOST—TWENTY THOUSAND YEARS

APPROXIMATELY four hundred thousand mine and metal workers were involved in strikes in the United States last year. The total number of days spent in idleness was in round numbers six million. Counting three hundred working days as a year, the strike loss of one branch of industry during 1921 amounted to twenty thousand years.

Nothing is so illustrative of utter waste as lost time. The mill cannot grind with water which has passed, but some other mill may, and the water as a matter of fact is still available for a thousand purposes. The proverbial spilt milk is not altogether a loss because it at least enriches the soil. Even neglected opportunity sometimes reappears in new guise. But time once lost is gone forever, like the continent of Atlantis, or Kaiser Bill's opportunity to prove himself a man of peace, or the fallen angels' chances for ever spending another summer at a cool resort.

In a period of high prices for the very necessities of life, the labor of twenty thousand men for an entire year can ill be spared. The economic loss to the nation would be considerable at any time, but it is especially great in an era of scarcity and inflated values. And those who caused the loss felt it most keenly. The sooner employers and employes realize that this is always the inevitable result of strikes and lockouts, the sooner will we arrive at the general establishment and acceptance of the open shop—the best friend honest labor and honest capital will ever have.

UNITED STATES GOLD CUSTODIAN OF WORLD

THE GOLD STOCK of the United States increased from a normal of one and three-fourths billion dollars in 1914 to about three billion dollars at the time that this country declared war in 1917. The gold stock then declined about half a billion dollars by excess exportation up to the spring of 1920, when the importation of gold began to exceed exportation. The gold stock May 1 of this year was slightly in excess of three billion dollars, indicating that these former losses had been balanced by the recent heavy influx of gold. The addition to our normal gold stock which took place between 1914 and 1917 was due to the exhaustion of credit and the need for shipping gold in payment for the necessaries of war which our Allies were forced to obtain in this country. When this nation entered the war heavy shipments of gold to Europe were made to meet our own expenses, and during 1919 this loss of gold was augmented by sending two-thirds of our total gold exports to the Orient in liquidation of adverse trade balances created largely by the extensive demands of our own people for luxuries, such as silk.

The heavy influx which has recently taken place is due largely to the negligence of this country as a creditor nation to extend the volume of credit necessary for the industrial reconstruction of Europe. It is also evidence that much of the credit extended through private channels was not properly allocated to the industrial requirements of Europe. Many opinions have been expressed with reference to the effect that this influx of gold will have in this country, as to whether it will be beneficial or not. The United States has become the custodian for the billion and a quarter dollars of gold which it now holds in excess of its normal gold reserve of 1914, and as a custodian for this gold it should not be allowed to become the basis for domestic credit and currency expansion. It is evident that if this gold were to become the basis of a credit expansion, it could not be readily released for export, and if the need arose for its exportation, it would force a too rapid contraction in the credit and currency structure of the country.

On May 14, 1920, the gold cover of the Federal Reserve note was 46.6 percent, from which may be computed that there was about two hundred million dollars in the reserve of the Federal Reserve Board above the amount required under the Federal Reserve Act. On May 11, 1921, the gold cover of the Federal Reserve note was 68.8 percent, which indicates a surplus of gold above the amount required by the Federal Reserve Act of some eight hundred million dollars. This increase in the gold ratio is not, however, due alone to the addition of gold to the reserve, but also to the notable contraction in the credit obligations of the Federal Reserve banks and in the contraction of the Federal Reserve note circulation in excess of two hundred million dollars during the year. Provided that the gold is not used as a basis for increased domestic credit or currency, it cannot have the effect of increasing commodity prices, but should to a marked degree, as the gold reserve builds up, reduce the interest rate, thereby encouraging production, and as consequence bring about a lowering of commodity prices. Furthermore, the effect of drawing upon Europe for this large amount of gold at this time has the effect of curtailing European purchase power in our markets, and if allowed to continue would still further impair the domestic purchase power of foreign currencies, which would be reflected in their purchase power in foreign markets. As a creditor nation we cannot escape the responsibility of still further extending credits to Europe until the industries of Europe have returned to a normal condition, as any other course would be to lessen the earning capacity of Europe to meet its obligations to us. There is a decided difference between augmenting our gold reserve at the expense of Europe and by increasing the domestic production from our own mines. The situation in this respect is very critical, at the present moment the costs of gold mining not having declined. The need for temporary relief to tide the gold mining industry over this crisis is apparent. An increased production of new gold will invigorate the entire financial system of the nation, preserve a large volume of developed gold ore reserves which will otherwise be wasted, and will safeguard the gold standard in surviving this period of economic stress.

TRANSPORTATION COSTS AS A COST FACTOR IN BASIC INDUSTRIES

INTELLIGENT PUBLIC SYMPATHY has appreciated the difficult position of the railroads in regard to securing revenue to meet the operating costs and to obtain fair returns on the invested capital. Confronted with high operating costs in which the labor item has been the most important—and decreasing revenues due to business depression, the railroads have been ground between the upper and nether millstone. Obviously, the railroads must be afforded the opportunity of working out a practical solution of this difficulty.

At the same time for certain basic commodities, it can hardly be questioned that railroad transportation rates are so high as to prevent a revival of business movement. This is well illustrated in the transportation cost for assembling the raw materials necessary for the production of pig iron.

In the production of pig iron, there are three basic raw materials—iron ore, coke and limestone. The present transportation cost for assembling and movement of raw materials to produce a ton of pig iron in the Pittsburgh district is well over $10 per ton. In some instances, the transportation cost for particular steel plants for assembling these raw materials amounts to $11.50, which was approximately the 1913 cost of the finished product. Under these circumstances, it is almost impossible to believe there can be any large purchases of finished steel products in connection with the building trades and other important consumers, as long as transportation costs remain at their present figure. When it is realized that the increase in the transportation costs for materials entering into steel plates has been 109 percent, some realization is obtained of the way in which high transportation costs for basic commodities have hampered and prevented the resumption of normal business activities.

What is true of pig iron is equally true of other basic commodities. For instance, considerable quantities of coal are shipped from districts in western and central Pennsylvania to New England factories. The transportation costs for a gross ton of coal from the Johnstown district to the New England mills amounts to between $4.50 and $4.80 per ton. The transportation costs at the present time are almost double the actual cost per ton of the coal f.o.b. at the mines.

Transportation costs of such a character must of necessity act as a deterrent to increased business movement, and therefore tend to lower railroad freight revenue as well as to prevent a return to normal industrial production.

The reduction of railroad wages is, of course, a primary and essential factor in the reduction of railroad operating costs. Such wage reduction, however, must be followed with a substantial decrease and readjustment in the transportation rates on basic commodities. Without such reduction it does not seem likely that there can be a return for some time to the normal production and distribution of such articles.

The railroads, by a voluntary reduction of such high transportation rates, following the reduction of railroad wages, can do more to restore business confidence and to open the way for a revival of industry than any other single factor in the present business situation.

ANOTHER COAL FAMINE

FIENDISH wisdom combined with unlimited power could not produce conditions better designed to create a shortage of coal during the winters of 1921-22 than those which now exist.

Consumers of coal who are evidently anticipating that coal may be purchased at a lower price are entirely overlooking the fact that the wage scale agreement in the bituminous coal deal does not expire until April 1922. Approximately 80 percent of the mine price for coal is made up of the labor cost. Little reduction can be anticipated in any line of production cost. Idle mines, idle freight cars and idle men are now begging the opportunity to mine and distribute the coal supply which the nation will need next winter.

A consumer must learn that even with the excess production capacity of our mines that they are not able under any condition to produce a years' supply of coal in one or two months.

Coal production cannot be made until there is an available market. Sub-normal coal production cannot continue much longer without producing a coal famine, a runaway market, profiteering prices and all of those conditions for which the consumer blames the operator, but for which he is directly and solely responsible. The coal consumer who does not immediately make arrangements to supply his needs will surely regret his improvidence.

AMERICAN OIL COMPANIES

AMERICAN oil companies, fully alive to the necessities of the present situation, are steadily extending the development of their interests over-seas, particularly in Central and South American countries. The extent to which a number of large American oil companies have secured oil acreage in Colombia and other South American countries, is surprising, and it is the feeling among those best informed that Colombia will soon take its place as one of the great oil producing areas in the world.

The oil deposits in Colombia are both extensive and of high quality. They are found in formations which show a greater resemblance to American oil fields than to the oil areas developed in Mexico, where the steady encroachments of salt water have, and are lessening the output of some of the most important oil developments.

One American company, with extremely large holdings in Colombia, believes that Colombia is the natural future oil reserve for the United States, and that the production and distribution of oil from Colombia has many advantages over other oil developments. Colombia is nearer to the refineries of the Atlantic Seaboard than the Mexico fields, is closer to the markets in Europe, as well as to the refineries on the Pacific Coast and to the Oriental market. Colombia is, therefore, a strategic center for the production and distribution of oil.

In addition to extensive developments in Colombia and other countries in South America, a number of large American companies have secured important holdings in Rumania, which it is believed as soon as industrial conditions become more stabilized in Europe will prove to be one of the richest and largest fields for oil development. American interests are well represented in the Rumanian holdings and there is an opportunity for further cooperation.

In view of the necessity of securing further oil reserves for the United States, it is essential that the National Government should continue as a permanent policy the present attitude of furnishing American investors abroad with full protection for their just and legitimate rights.

In times past, the American investor has seldom been able to secure a prompt and cordial response to his legitimate requests for proper support and protection in maintaining his rights and preventing discrimination against his interests. It is to be hoped that during the coming era, when there will be a steadily increasing opportunity for American investments abroad, and when such investments are themselves a necessary and primary factor in the development of additional outlets for American machine equipment, that the national government will appreciate the necessity of a vigorous and sound permanent foreign policy.

LOBBIES—WHAT OF THEM?

EVERY NOW AND THEN some orator who has run out of soap or some agitator who never used soap, reels off a few yards about a "powerful and insidious" lobby down at Washington. Sometimes it is called the "invisible government" and sometimes the "interests," but always it is "powerful" and, if not expressly used, the characterization "insidious" is always implied.

How come? How do they get that way? What is there inherently wrong in telling a legal representative of all the people just what you—one of the people—think he ought to do in a given set of circumstances? Let's think about it for a moment and see how utterly vapid and nonsensical all such references to the existence of a lobby generally are.

We have in Washington close on to six hundred Senators and Congressmen. Each of them hails from a particular state, but all of them are Senators and Congressmen of and for the whole United States. No one of them can possibly know all there is to be known about any one question upon which he is expected to cast a vote, let alone all that there is to be known about all of the issues which come before Congress. More than three thousand measures are pending now! The only manner in which they can arrive at the knowledge required in casting an intelligent vote is by acquiring information from persons who possess the facts, and naturally they are the interested parties, pro and con. In actual practice every bill is referred to a committee. The committee makes a thorough investigation and reports its conclusions, upon which the average member of Congress largely relies in casting his vote. These committees frequently call upon organizations representing the several industries to furnish the facts upon which their conclusions are to be based.

It must not be forgotten that for every person who wants Congress to do a certain thing there are one or more persons who oppose its being done. Under a republican government which professes to grant bona fide representation wherever it imposes taxation, each and every one of them is entitled to be heard. And the best way to make themselves heard is to go direct to headquarters and talk face to face with the men who have the deciding voice.

President Harding is not a recluse; neither is he an autocrat. His expressed desire to "get together and talk things over" is one of the strongest and most popular planks in his work-a-day platform. Congressmen, Senators and administrative officials are glad to be advised, and not only accept advice from persons and associations resident in the capital but seek and secure additional guidance from other cities and rural communities. The lawmaker who would retire within the cloistered seclusion of his own impeccability and close the doors of his office upon his constituents would be an ingrate, an egotist, or a snob, if not a plain fool.

There are in Washington more than fifty organizations and, at times, thousands of individuals, looking after their own interests as affected by government. Included among them are the miners, the school teachers, the lumbermen, the prohibitionists, federated religious bodies, the merchants, the laboring men, the manufacturers, the soldiers, the consumers, the women and the farmers. Nearly every class which adds to the health, wealth or happiness of the nation is represented here. To condemn one of them is to condemn all, for they are all in the same boat.

Representatives of the farmers, by the way, were making their influence felt at both ends of Pennsylvania avenue before any of the other "powerful" organizations complained of were incorporated and before the grandfathers of our oldest lawmakers were born. In this circumstance is found the reason where there are no national laws burdensome to agricultural interests and the basis for the belief that an emergency tariff act for the protection of farmers would be one of the first laws passed by the present extra session of Congress. But the farmers are to be congratulated, not condemned, for thus protecting their own welfare, and similar praise should be accorded all other interests which pursue the same course. Had a greater number of organizations and individuals shown a disposition in past years to assist in the enactment, interpretation and administration of national laws, we would have fewer taxes and fewer laws and better laws today and the Administration would not now be confronted with such a heavy task in bringing about less government in business and more business in government.

The problems of today and tomorrow and the next four years concern us all alike. The quickest and most righteous way of effecting their solution is to get together and talk things over. The place to get together is Washington. Not by silence and aloofness can agriculture, mining, manufacturing and commerce best promote the public welfare, but rather by consultation and co-operation at all times with the constituted governmental authorities. If this amounts to lobbying—and it certainly does—then lobbying is to be encouraged and the country is to be congratulated that we have it.

Unless the man who rails against lobbying be a demagogue bidding for attention, he is generally found to be some one who has been opposed at Washington by some one who was more successful than he. Whoever can answer his opponent's arguments or checkmate his stratagems will do so without resorting to an attack upon his character.

This is a government of red-blooded men and women, by and for red-blooded men and women. It is wrong to think that citizens who come to Washington to make their wants known and their influence felt are crooks who need watching, and equally fallacious to assume that Congressmen and Senators are weaklings who need protection from powerful and insidious lobbyists. Let's cut out the crimination and recrimination, get busy and pull together. In the multitude of counsel there is wisdom.

WE DEMAND STABILIZATION

THE Coal Industry Stabilization Bill, providing seasonal railroad rates and government regulation from the mine to the furnace, goes right to the bottom of things. It could well be entitled, "A bill to give us what we want when we want it," or, as some would prefer to call it, "A bill to make us want what we ought to want when we don't want it, and also to make us like it."

Most of our troubles in life are seasonal troubles, due to inability to get what we want when we want it. In babyhood we cry for what we want till we get it. Business men never cry, although they sometimes squeal. They have tried every known method to have their needs supplied and their wants met, but every experiment failed until we resorted to stabilization by legislative enactment, and that succeeded beautifully. Witness the results of the Fuel Administration and the Railroad Administration, both of which stabilized things in such eminently satisfactory fashion during the war. Having learned how to set things right during war, it is proper that we bring over the blessings of stabilization to these piping times of peace. Of course we must have coal stabilization, but we must not stop there. Other commodities are just as important and equally affected by the seasons, and in respect to them Congress has an equal right to investigate, legislate and regulate—all of which are summed up in the one word, stabilize.

Take umbrellas. The public won't buy umbrellas while the sun shines, and the rainy season is too late. Congress should pass a law lifting the war tax and compelling merchants to sell umbrellas at half price during the dry season. Then everybody would lay in a supply and there would be no more flu epidemics. Such a law would also go a long way towards solving the prohibition question. No flu, no need for flu medicine.

Consider oil. More people use oil than coal, because nearly everybody owns a flivver, yet the supply invariably is shortest and prices the highest just when gasoline is needed most and the demand is greatest. Freight rates on oil should be lowered during the off-season and distributors should be compelled to erect additional storage tanks to provide extra capacity for the busy season. City fire ordinances forbidding the keeping of more than fifty gallons in home garages should be repealed. The oil industry should be stabilized along with the coal business, so those who lay in a supply of coal in summer can stock up on gasoline in winter.

Think how prosperous and contented the country would now be if steel had only been stabilized a few yeara ago. Steel is in general use in every walk of life and there is somewhat of a demand for it during all seasons. We can't get along without it, and can't get it unless we buy it, and can't buy it unless we pay freight from Pittsburgh, although it is manufactured in our own home town far away from Pennsylvania. This same condition prevails with respect to shoes and hats and talcum powder and shaving soap and corn salve. Stabilize them all. Then we will have no housing shortage, no last-season's lids, no corns, no shiney noses and no whiskers. How perfectly alluring are the possibilities of stabilization!

Fruit. Washington apples and Florida grapefruit have been known to rot in the fields because freight rates were too high or fruit growers refused to be deflated. Result, Chicago does without breakfast cocktails and New England suffers from a pie shortage. Both industries must be stabilized.

Cotton. Everybody who wears all-wool suits and striped silk shirts appreciates the universal indispensability of cotton. Cotton was not stabilized during the war. Southern farmers made so much money that they joined the ranks of the plutocrats, and now they are not only voting the Republican ticket but in some states, at least, they actually insist on having the votes counted. The South needs to be stabilized. If the shipment of West Virginia coal to the Alabama fuel regions is to be forbidden through a zoning order, why not prohibit the shipment of Southern cotton to distant woolen mills. Cotton advances four dollars a bale and clothing jumps forty dollars a suit. More people use clothes than coal, and the demand is ninety-nine percent seasonal. Stabilize the clothing industry.

What of the House and Senate themselves? After nearly a century and a half, some of our lawmakers still disagree about the way things should be done. They introduce three thousand bills on the opening day and few others for thirty days. So many laws are considered that frequently the first we hear of a new one being born is when we learn that Senator LaFollette has talked it to death. Let's stabilize Congress.

By all means stabilize coal, but why stop with coal? Why stop anywhere? or at anything? At some season or other, we use everything, and everything we do affects somebody else. Let Congress stabilize everything we see, taste, smell, hear, and feel from the time we first open our eyes till we close them in our final sleep. That will take care of all our worries except the funeral. And the unions will stabilize that.

MADAME CURIE FORGETS TO PRESS THE BUTTON

THOSE WHO WITNESSED the brief ceremonies held in the auditorium of the Interior Department on Saturday, May 21, when Mme. Marie Curie was presented with a specimen of the first carnotite ore ever shipped and a block of the same substance as it is mined today, will never forget the illustration it afforded of a great scientist's consecration to and concentration upon her chosen work. The picture of the frail little woman who was oblivious to the personal honors a whole nation was bestowing upon her, and insensible to the fatigue which gripped her body, but keenly alive to and aware only of the unmeasured powers hidden in the mineral before her, will remain vivid in their memories long after they have forgotten that the remains of the late Chief Justice of the United States were lying in state and many other things of interest to the world were happening on that day.

Mme. Curie, who had come to dedicate the new cryogenic or low temperature laboratory of the United States Bureau of Mines, was feeling very weak, and was unable to respond to the very brief address of welcome delivered by Dr. H. Foster Bain, director of the Bureau. Because she was not strong enough to go down stairs and say the word to start the machinery of the laboratory, a special wire was hastily run to the stage of the auditorium so she could press a button and give a signal to the engineer. After making a statement to this effect, Dr. R. B. Moore, chief chemist of the Bureau, unwrapped a bottle and made the announcement that it contained two pounds of the first carnotite ore ever shipped. He laid it on the table, together with a bundle, wrapped in a newspaper, containing a lump of the same substance as mined today. Both had been sent by Gordon Kimball, of Ouray, Colo., owner of the Copper Prince Mine, to be presented to Mme. Curie.

"Mme. Curie will now press the button," Dr. Bain said.

But Mme. Curie did not press the button. She did not even take hold of the button. She was saying something to Dr. Moore.

He said afterwards that she was giving the address to which the ores were to be shipped and telling him that she meant to place them in a museum in Paris where they would be kept forever.

"Mme. Curie will now press the button," Dr. Bain repeated as he pressed the instrument into her hand. The hand closed automatically, but still no signal was sent to the engineer. Dr. Moore spoke to her but again there was no response. Her eyes were transfixed upon the bottle of yellow ore, and to all outward appearances she did not know there was anything else in all the world. At this juncture Mrs. Robert Woods Bliss, chairman of the Madame Curie Reception Committee of Washington, spoke to her as Dr. Bain and Dr. Moore had done. The combined and contemporaneous efforts of the three were successful, and Mme. Curie without turning her head pressed the button which signalled the beginning of a new effort in the production of helium gas, which has revolutionized aerial navigation and the science of warfare. Then she rose, picked up the bottle of ore, looked at it, fondled it, and yielded it reluctantly to Dr. Moore. When he wrapped it up she smiled and her thoughts returned to the world.

The first carnotite ore ever shipped, in 1898, was refined for its vanadium content. Dr. Moore said it has been estimated that the amount used for this purpose contained enough radium to yield the gram which Americans have given to Madame Curie.

Scientific data obtained at the cryogenic laboratory will be used at the government's plant for extracting helium from natural gas at Petrolia, Texas. On the Sunday following the dedication Madame Curie, feeling stronger, returned to the Interior Department and made a thorough inspection of the laboratory in operation.

UTAH CONVENTION COMMITTEE FORMS WORKING ORGANIZATION

THE COMMITTEE appointed by Governor Charles R. Mabey to handle the matter of Utah's representation and exhibit at the Mining Congress convention and National Exposition of Mines and Mining in October formally organized April 28 by electing Ernest Bamberger chairman, J. A. Barclay vice-chairman and M. H. Sowles, treasurer. Governor Mabey met with the committee and promised the cordial support and co-operation of the administration and himself personally to the movement. He said he hoped to attend the Chicago convention as a member of the Utah delegation. The Governor was made honorary chairman of the committee by acclamation.

A sub-committee met a few days later at the offices of the Utah Chapter of the American Mining Congress and arranged for investigations preliminary to making a report and recommendations to the committee at an early date.

DEATH COMES TO UTAH OPERATOR

JUDGE NORMAN W. HAIRE, for several years a Director of the Utah Chapter, American Mining Congress, died at his home in Salt Lake City April 22. He was a native of Michigan, where he practiced law, served fourteen years as judge of the Thirty-second Circuit Court and subsequently was an officer of the Bigelow Mines syndicate. He moved to Salt Lake City in 1912, where he became president and general manager of the Michigan-Utah Consolidated Mines Company, a position he held until the state of his health compelled his retirement from active business about a year ago.

A GENERAL SALES TAX IS INEVITABLE—WHY NOT NOW?

By Reed Smoot

U. S. Senator from Utah

AFTER giving considerable study to the wisdom of enacting into law a general sales tax, three alternative propositions appear as a basis for such tax which, stated briefly, are as follows:

1. A rate of one-half of 1 percent, but not to exceed 1 percent, on all sales without distinction of integrated or unintegrated concerns.

2. A rate of three-fourths of 1 percent, but not to exceed 1½ percent, with a credit for taxes previously paid on goods bought for resale.

3. A rate of 1 percent, but not to exceed 2 percent, without distinction of integrated or unintegrated concerns, but exempting each dealer on the first $50,000 of annual sales.

For simplicity of administration and collection of he tax, I have concluded to support the first-named plan, and for the purposes of this bill have specified a rate of tax of 1 percent. If at any time the amount to be raised from such a tax is to be reduced or increased, the only amendment required to the law would be to change the rate of tax.

The bill I have offered follows closely the provisions of the Philippine sales tax and today is the most satisfactory tax to all classes and the most productive that is imposed in the islands.

Attention is drawn to a brief explanation of the principal provisions ot the bill. Later, when the revision of the revenue law is before the Senate, I shall take pleasure i. discussing it in detail.

A general sales tax is a tax on the gross value of goods, wares, and merchandise, whether raw material or manufactured or partially manufactured products, whether of domestic or of foreign origin, and such as are generally sold or exchanged and delivered for domestic consumption, whether in barter or on a cash, credit, or installment basis, which tax shall accrue at the time of sale or lease of all such goods, wares, and merchandise, at a rate of 1 percent of their total value at the time of such change of ownership. This tax also applies to the total amount or amounts received on all leases of goods, wares, and merchandise.

The proposed exemptions are all sales and leases are exempt from this tax when made by—

(1) The United States or by any State or Territory, or political subdivision thereof, or by the District of Columbia, or by any Army or Navy commissary or canteen.

(2) By any foreign government.

(3) By any mutual ditch or irrigation company.

(4) By any hospital or by any corporation organized and operated exclusively for religious, charitable, scientific, or educational purposes, or for the prevention of cruelty to children or animals, no part of the net earnings of which inures to the benefit of any private stockholder or individual.

Sales and leases of the following goods, wares, and merchandise shall also be exempt from this tax:

(1) Such as are sold or leased for export and in due course are actually exported.

(2) Such as are subject to the taxes imposed in titles VI and VII of the revenue act of 1918; i. e., beverages, cigars, tobacco, and manufactures thereof.

SENATOR REED SMOOT
Who advocates a general sales tax of one percent

(3) Such as are subject to the taxes imposed in paragraphs (1), (2), (3), (12), and (20) of section 900 of the revenue act of 1918; i. e., automobiles, automobile trucks and wagons, motor cycles and tires, parts and accessories; dirk knives, stilettos, etc.; yachts, motor boats, etc., to be used as pleasure boats.

(4) Total sales and leases on goods, wares, and merchandise which in any taxable year do not exceed $6,000.

Its advantages when compared with other taxes are (a) its extreme simplicity of assessment and collection. The employment by the taxpayers of costly tax experts is quite unnecessary as is the burdening of the tax administrative machinery with complicated, expensive and long drawn-out audits causing long delays in the collection of taxes. It is not inquisitorial; it does not raise difficult questions about losses, depreciation, and the like; it is more easily allocated among competing jurisdictions than a tax upon net income. No revenue defrauder in the Philippines ever claimed ignorance of the law in palliation of his offense.

(b) Each taxpayer pays out of his gross income his sales tax and automatically grades the amount according to his ability to pay; this grading is far more exact, scientific, and equitable than are the artificial steps or brackets imposed by the net income tax system of existing revenue laws. Under a sales tax the taxpayer pays as he goes along and does not feel the burden, while under the existing revenue law hundreds of thousands of income taxpayers are today, when reduced incomes are the rule, greatly harassed by the payment of taxes which accrued a year ago when incomes and profits were greater than they are today.

(c) The tax rate is low and uniform on all goods, wares, and merchandise. The fact that it applies alike to all mercantile transactions makes possible for great productivity, together with a low tax rate. The absence, in the Philippines, of discriminatory tax rates leaves all taxpayers satisfied (1)because all pay the same rate and (2) because goods sufficiently similar to be competitive, even though not identical, are taxed alike. The high discriminatory tax rates imposed under existing revenue laws appeal to the taxpayers as extremely unfair and are resented by them. This is the main cause why the tax administration has thrown up its hands, recommending the repeal of some of these consumption taxes, because they say they are easily evaded and too costly to collect.

(d) The taxpayer can tell to a cent and with absolute certainty and with a minimum of effort at the close of business each day exactly where he stands as to profits and tax liability. Under the complicated existing excess-profits tax the taxpayer never knows, to a certainty, what amount of profit he has to add to his business to come out whole. Naturally he adds all he thinks necessary, and experience has demonstrated that in many cases he has doubled or trebled the amount, all of which inevitably results, as the goods pass along to the ultimate consumer, in a pyramiding of prices. An investigation made by the Department of Justice in connection with the Lever Act tended to show that as a direct result of the unwise and complex provisions of the excess profits law the prices of certain commodities to the ultimate consumer were increased over 23 percent. A simple, sane, intelligible sales tax at a rate of 1 percent, even though pyramided several times, would nevertheless be but a fraction of 23 percent and would certainly result not in an increase but in a substantial reduction of the present high prices of necessities.

—*Indianapolis News*

IF AS ADVERTISED

The results of the general sales tax in the Philippines during the first sixteen years of operation:

(a) It has become the most productive item in the insular tax system.

(b) It has not hampered any type of business or manufacture in the island; it is precisely during the life of the sales tax law that commerce and industry of all kinds have thrived as never before.

(c) The Philippines Government is enthusiastic over the results of the sales tax and so cabled the Secretary of the Treasury in Washington four months ago, stating that their sales tax was the "most equitable, productive, simple, and economical" tax they had; that the original tax rate of one-third of 1 percent had been increased to a full 1 percent; and that the Philippine Government was then (December, 1920) considering the advisability of again increasing the tax rate, this time from 1 percent to 2 percent per turnover.

(d) Prominent merchants with offices in Manila and New York City have in printed statements been equally as enthusiastic over the operation of the sales tax law as is the Philippine Government, as quoted in the foregoing paragraph. Industrial and commercial methods and conditions in the Philippines have, during the last 22 years, become thoroughly Americanized, as scores of reputable witnesses—formerly in the Philippines and now in this country—are willing to testify. All of which should be sufficient to prove an error in judgment on the part of those in this country who have, on scant knowledge of their own, condemned the Philippine sales tax as being in principle rank economic heresy and in operation impracticable.

Normally, the entire taxes paid on each turnover are shifted and rest finally on the ultimate consumer. This because the purpose of all business is profit and the cost of goods includes every item of expense such as raw material, labor, freight, rent, traveling expenses, interest, selling expenses, losses, and taxes. All of these items are normally shifted to the ultimate consumer. It can be demonstrated with mathematical accuracy that even with a half a dozen turnovers, and the corresponding 1 percent taxes, the price of commodities to the ultimate consumer is very rarely increased over 3½ percent. Compare this with the 23 percent increase resulting from the operation of the excess-profits tax. The 2½ or 3½ percent tax content in commodities bought by the ultimate consumer means that a lot of goods which, sales tax paid, cost him \$102.50 to \$103.50 would, without the tax, cost only \$100. But as a matter of fact, the sales tax encourages thrift and eliminates the 23 percent which the operation of the excess-profits tax now loads on many commodities. Therefore the net result of a moderate general sales tax rate would be a considerable reduction to the ultimate consumer in the value of the \$100 worth of goods in the example given above.

Compared with the merchants' and manufacturers' ordinary profits on each turnover of goods, the 1 percent sales tax is so small that it was found, after many years' experience in the Philippines, that normally in ordinary commercial transactions very little attention was paid to the tax. Under abnormal conditions, where the profits were larger than usual the sales tax was absorbed.

We must consider how a 1 percent sales tax on final output affects (1) a large integrated concern with, say, six multiple processes between the raw material and the finished product as distinguished from (2) a half a dozen independent concerns, each performing one of the six multiple processes, performed by the integrated concern, and each paying a 1 percent sales tax on their output of the partially manufactured product.

The natural assumption would be that the six independent concerns amongst them would pay six times the amount of sales tax that the integrated concern would pay on the same output. But this assumption would be wrong, for the following reasons:

(a) Each of the six independent concerns would shift along to the next independent manufacturer in line all of the original costs of raw material plus the various costs at that stage of the partially manufactured product plus his own profit and the compound profits of the manufacturers who had preceded him and add the 1 percent turnover tax to the bulk sum of all these items. The total of these six profits en route would make the finished product to the ultimate consumer several times the amount for which the first independent manufacturer purchased the raw material. Therefore, instead of 6 percent—1 percent on each turnover—the tax content of each dollar the ultimate consumer paid for a finished product would, normally, range between 2½ percent and 3½ percent.

(b) The integrated, multiple process concern would add merely the cost of production in each of its processes to the partially manufactured goods entering the next process and add to the total cost its profit, together with 1 percent of the total sale price of the finished product, which is normally sold in competition with and at approximately the same price as similar finished products are sold by the last one of the six independent manufacturers.

Therefore, the advantage which the large integrated concern would have over each of the independent concerns would be from two-fifths to three-fifths of 1 percent—that is, 2½ percent or 3½ percent divided by 6. But as independent manufacturers, large and small, have thrived and continue to thrive alongside of large integrated multiple-process concerns the natural assumption is that they will continue to thrive, regardless of a fraction of 1 percent advantage. Whether this advantage will be used is doubtful. So far the large concerns have shown no disposition to drive their small competitors out of business. No doubt the large manufacturer is more than satisfied to allow his small competitor to set the price.

vening Post

IN THE DOCTOR'S CONSULTING ROOM

Logically competition and the sales tax would result in an increase of 1 percent or 2 percent or 3 percent to the ultimate consumer, and the repeal of the excess-profits tax would result in a decrease to the ultimate consumer of several times that amount. As for the small independent manufacturer and the large integrated multiple-process concern, they should continue in the future, as they have in the past, to operate alongside of each other.

If the sales tax bill becomes a part of the revenue laws of our country Congress can repeal not only the items provided for in the bill as presented by me, but can repeal all of the irritating, nagging, discriminatory taxes amounting to hundreds of millions of dollars, and the excess-profits tax, the result of which has worked such havoc with the business concerns of our country, which have

—Toledo News-Bee

STEADY-Y-Y-Y BOYS!

in many cases been compelled to pay the excess-profits tax on paper profits.

I have received a few letters of complaint against a general turnover tax from concerns doing business on an average of 2 percent to 3 percent profit on their turnover sales and claiming that if the 1 percent sales tax is imposed it would ruin their business. Perhaps in some cases the imposition of the tax, if it had to be paid by the merchant, would seriously cripple their business; but such concerns must understand that the tax imposed is to be paid by the purchaser. It is to be added to the regular price charged for all goods sold. If the merchant desires to absorb the tax there is no objection to his doing so, but the law does not contemplate any such result.

Some day not far distant America will have a general sales tax law and with new forms of pensions and bonuses that will become a heavy drain upon the Treasury, together with the 2½ percent sinking fund for retirement of the public debt and nearly $1,000,000,000 of interest to be paid annually upon the government obligations, the sooner a general sales tax bill is enacted into law the better it will be for America.

REVENUE BUREAU OFFICIAL RESIGNS

C. F. POWELL, Chief of the Subdivision of Natural Resources, Income Tax Unit, Bureau of Internal Revenue, has resigned, effective July 1. Mr. Powell, who some months ago succeeded J. C. Dick, of Salt Lake City, as head of the division that concentrates on the taxation of mining and other natural resources, will enter the practice of oil engineering with headquarters in New York City.

Mr. Powell joined the Income Tax Unit as petroleum valuation engineer two years ago, after operating experience in the fields of Kansas, Oklahoma and Texas. Four months after the beginning of his service with the government he was promoted to Chief of the Oil Section of the Natural Resources Division, subsequently being advanced to the captaincy of the division upon the retirement of Mr. Dick.

THE GENERAL SALES TAX—ITS DISADVANTAGES OUTWEIGH ITS VIRTUES

By H. B. Fernald

Member of the American Mining Congress

After experience with a sales tax in both the Philippines and Mexico, certain definite arguments in its favor must be recognized. It is a relatively simple tax to define by law and regulations, provided it is to be a general sales tax at a uniform rate, not complicated by numerous exemptions. It could perhaps be collected by a fairly simple procedure, although it is not so collected in either the Philippines or Mexico It would undoubtedly yield a large revenue and be more constant in its yield than an income tax. It would give the government substantial revenues, even though they came from business which was making no profits or laboring men who were unemployed. It would spread the tax burden more evenly throughout all sections of the country and among all classes and conditions of the people.

These arguments may fairly be urged for it, but they are not the main arguments which have been advanced to gain for it the popular support.

One of the principal arguments has been that a sales tax law has been successfully administered in the Philippine Islands and that, therefore, it would be successfully applied in this country. This seems a valid argument to those unacquainted with the provisions of the Philippine law, the history of Spanish tax systems, and the form and organization of the Philippine Government. The force of this argument disappears almost entirely when we consider the following facts:

(1) The Philippines are essentially an agricultural country. There is no general manufacturing of goods for local consumption. The largest trading enterprises are concerned with the purchase of agricultural products for export and the importation of foreign goods for sale in the islands. The law exempts from the sales tax (a) Importers, on foreign goods imported by them; (b) Agriculturalists, on products actually raised by them, consumed by them or sold to local dealers or to exporters; (c) Exporters, on all goods exported; (d) Merchants whose annual sales do not exceed in value $250. This results in exempting from the sales tax the larger part of the important business activities in the islands. For example, some of the largest concerns are engaged in importing goods which, through their agents, are sold to agriculturalists in exchange for the agricultural products which are then exported to foreign countries, with no sales tax whatever applying on such transactions. The result is that the Philippine sales tax yields about 70 cents a year per capita, although the present tax rate is three times that originally imposed. The tax as applied in the Philippines manifestly is not such a general sales or turnover tax as is being urged for this country.

H. B. FERNALD

Who appeared before the Finance Committee of the Senate in opposition to the general sales tax, as the result of his experience in Mexico and the Philippines.

(2) Stamp and sales taxes have been an essential part of the revenue policy in all Spanish countries. The people have been accustomed to the official stamping and scrutiny of practically all their transactions. I still have my old copy of the Spanish Commercial Code which by Royal Decree went into effect in Spain in 1886, superseding the prior Code of 1829. By similar Royal Decree it was, with only slight modifications, applied to Cuba and Porto Rico and to the Philippines.

Among the provisions of this Code, were those prescribing the books which every merchant must keep,—a book of inventories and balances, a day book, a ledger and a copying book for letters and telegrams, — all bound books, ruled and paged, which had to be presented, before they were put into use, to the municipal judge of the district, so that they might be duly registered and every leaf of each book duly stamped and sealed. Every business transaction for cash or credit must be entered through the day book and posted to the ledger, by order of dates, without leaving any blanks, and without any interpolations, erasures or changes. Any errors were to be corrected by contra entries giving full explanation with regard thereto.

This was only part of their fundamental business law, and it was coupled with stamp taxes of all kinds. Business did not thrive and develop under it, but it formed the basis for the ready acceptance by the people of the sales tax. It even made them ready to submit to the serially numbered stamps which Mr. Hord, as collector of Internal Revenue, insisted were an important feature in preventing evasion of the tax. Careful record had to be kept of the serial numbers of all stamps purchased by each merchant so that inspectors could check up and see that each merchant was using the stamps which he had himself purchased, thus not giving him any opportunity to obtain and use stamps other than those he had purchased from the Internal Revenue offices on filling out official forms which served to register him as engaged in a businesssubject to the tax.

I did not then think, and do not now believe that, the serially numbered stamps were a necessary feature of the tax. I only cite them to illustrate the difference in temperament and habit of the people in the Philippines from those in this country. Give our people here the experience of a generation under the Spanish Codes and we could argue that they would accept the sales tax and even the serially numbered stamps. But without such experience, the Philippines sales tax constitutes no precedent for this country. There is no reason for believing our people would accept the Philippines sales tax itself when we know that they would not accept the methods successfully used in the Philippines for its collection.

(3) In the Philippines the insular government had a tax collector in every town, because municipal treasurers acted as collectors of insular revenues. To have equal facilities here, we should have to create a federal tax office in every town, and make the Treasury Department almost a rival of the Postal Department in number of employes. We could not, therefore, compare our cost of collecting the tax here with that of collecting it in the Philippines. Here again Philippine conditions fail as a precedent for this country.

Mexico has had a general sales tax, and, under the Mexican Federal Stamp Tax Law of 1906, with which I was familiar, stamp taxes were also applied to payrolls, to checks, to almost all forms of contracts and agreements, to marriage settlements, to ante-nuptial donations, to lotteries and raffles, to government concessions, and practically every kind of financial transactions. There were 102 different class of stamp taxes set forth in this law, including a tax of 5 cents for each leaf of the day book, ledger and balance book, which merchants must keep to comply with the Commercial Code, and a tax of 1 cent for each leaf of the sales books which must be kept for every business habitually making sales. The Mexican law follows the old Spanish Code in its requirements for all these books, and the officially registered sales books are the essential basis for checking up the correctness of the sales taxes paid.

The Mexican system is no more a precedent for this country than is that of the Philippines. I do not pretend to say whether their business law and tax systems have been responsible for the failure of business to develop in these Spanish countries or whether it is the absence of the proper commercial temperament which is responsible for the existence of such laws and tax systems. Whichever it may be, these countries do not constitute a revenue or business precedent for us.

Sales tax advocates make very positive statements that a general sales tax would, even with a large number of turnovers, mean an increased cost of only $2\frac{1}{2}$ percent to $3\frac{1}{2}$ percent to the ultimate consumer. Calculations are made showing that on a loaf of bread the tax would be less than one-sixth of a cent, on a rubber tire the tax would be about $3\frac{1}{4}$ percent of the price to the consumer, and on a suit of $60 clothes the tax would be 2.61 percent of the price to the consumer. The figures seem convincing, as they start with the raw material and follow through the several stages of production, with a calculation of the sales tax at each stage. The tables are, however, entirely fallacious in that they fail to take into account the effect which a sales tax would have on the many items of cost of manufacture other than the basic material.

For example, for the loaf of bread it is not the wheat and flour alone on which the sales tax would be levied. It would also affect every other item of expense from original producer to final customer. Coal, for example, will be subject to the sales tax, with one or more turnovers before it reaches the miller or the baker, so that in some form or other the sales tax applicable to coal must be reflected in the cost of the loaf of bread. But we cannot consider merely the tax on the sales of coal itself; we must consider the tax involved in every item which enters into the cost of coal. Railroad freight is an important item both in coal and in wheat, and we cannot expect railroad freight not to be increased if the railroad is having the cost to it of all the materials it uses increased even 2 percent to 3 percent by the sales tax.

Of course, when we attempt to figure the increase of freight due to the sales tax on steel rails, and the cost of rails increased by the sales tax on coal and coke and by the increase in freight on coal and ores, we get into an endless chain. The same endless chain develops if we try to take the barrels in which the flour is shipped, or any one of the many other items which, if increased, would give an increased cost for the loaf of bread.

But we cannot figure merely on an increase in cost of commodities due to the sales tax. No one can pretend to urge that the sales tax would give an increased cost of even 3 percent in commodities without allowing a compensating increase to labor. If we are to assume a general increase in commodities proportionate to the tax paid on their sales, we must assume a corresponding increase in wages. If, therefore, we wish to calculate the increased cost of the loaf of bread we must take into account not merely the sales tax on each dollar of commodities, but also a similar amount on each dollar expended for labor. This again leads to the endless chain which I think no one can try to measure.

We may admit that it is probably no more difficult to figure the effect of a sales tax upon prices than it is to figure the similar effect of any other tax. The sales tax does not, however, possess the particular advantage that a simple calculation can be readily made to show its exact effect upon selling prices. Any problem is simple of calculation if all bothersome factors are ignored and no attention paid to the correctness of its solution. The sales tax does tend to pyramid, and the tables prepared are incomplete and misleading and do not reflect the actual results which a sales tax would have. My own best estimate is that the calculations are at least 100 percent to 200 percent in error.

I might in this connection say that I think the statements made as to the great increases in price which resulted from the Excess-Profits Tax Law are entirely unwarranted. Today, with the Excess-Profits Tax Law in effect, we have a large range of commodities selling at far less than they were in the early part of 1917 before the Excess-Profits Tax Law was enacted. The same tax laws are in effect today as were in effect a year ago. It is not a difference in tax laws, but a difference in supply and demand, that makes the difference in prices.

No one, I think, can say that if the sales tax law were enacted prices a year from now would be higher or lower than they are today, but this is no justification for a set of calculations which purport to show the cumulative effect of the sales tax on commodities but ignore many other elements essential to a proper calculation.

The mere fact that the advocates of a sales tax have made use of some unsound arguments would not warrant opposition to the tax itself. I have already referred to the fact that I did not consider there to be anything essentially unsound and wrong in a sales tax. Perhaps it is not really subject to any greater criticisms or to any worse defects than apply to some other tax plans. There is no tax which can be relied on to apply with uniform fairness and equity to all the taxpayers of the country.

It is not, therefore, because the sales tax is not a perfect tax that I feel opposed to it, but it is because I am satisfied that the sales tax, being what it is and working as it would work, would not be satisfactory to the people of the country. If enacted, I am convinced it would breed such dissatisfaction that it would be promptly repealed. It would, therefore, be a backward step, since we would again find ourselves no nearer a permanent financial policy for the government than we are today, and would have a largely increased feeling of distrust and dissatisfaction with the fiscal policies of the government and a lack of confidence in those now charged with their administration.

The sales tax is undoubtedly a consumption tax intended to spread the burden of taxation proportionately to consumption instead of having it fall proportionately to income. The great consumers of the country are the farmers and the laboring men, and no one wishing to stir up dissatisfaction and discontent would want a better argument than to tell them in season and out of season that the sales tax was merely a device to transfer the tax burden from the wealthy manufacturers and traders, and from the capitalists and speculators, to the poor laborers and farmers, and to their wives and children.

In spite of all the arguments which may be offered that the sales tax would be only a minor part of the sales price of the goods, we know from our general experience that our farmers and laboring men and their wives will be told as they go to make their purchases in the stores that the prices were up because of the sales tax. Perhaps this may not be used as an argument for increasing present prices, but it would certainly be used as an argument against their decrease. It is such a good argument for the storekeeper that we could not expect that he would fail to use it. I do not see how we could hope under such conditions that the farmers and laboring men would not believe that the sales tax was placing on them a burden which, through some form of income taxes, or by luxury taxes, should be met by others. If we were faced with the absolute need of revenue, with no possible means of raising it other than the sales tax, I would, of course, feel that it should be adopted and the possible dissatisfaction should not deter necessary steps in the reconstruction of our government's finances. I do not, however, feel that we are in that condition, and I therefore believe that it would be a great mistake to impose a sales tax, recognizing, as we must, the dissatisfaction to which it would give rise.

The question is not essentially one of substituting a sales tax for the excess-profits tax. The excess-profits tax should be repealed because it is bad. Whatever argument may have existed for it as a war measure does not exist today. It did raise a large war revenue, but it has the fundamental defect that it puts a premium on wealth and extravagance as opposed to energy and economy. The wealthy corporation with a large "Invested Capital" pays little or no tax, whereas the smaller corporation with less capital and perhaps good credit, in trying to build up a new business may pay the maximum tax rate. We need today to encourage, rather than to discourage, energy and economy in business, and we should not make large wealth necessary in order to avoid a high excess-profits tax rate.

Anyone who has had extensive experience with this Excess-Profits Tax Law can recognize this and many other defects which make it work out in a very unfair manner. The Excess-Profits Tax Law cannot be amended to eliminate these features, since they are inherent in the standard of "Invested Capital" on which it is based. It is because of its many and irremediable defects that the law should be repealed.

With this law repealed, we should then proceed to raise in the best manner possible the amount which is essential to the proper and economical conduct of the government. This, I think, can be raised in methods which would be much less objectionable to the country than the proposed sales tax.

INVESTIGATIONS BEING MADE BY BUREAU OF MINES

An outline of the work being carried on by the Bureau of Mines, at its own stations and elsewhere in co-operation with producing and manufacturing companies, discloses a wide and interesting range of activities.

Volatilization of low-grade lead and zinc ores, lead fume problems and the recovery of silver, lead and copper from low-grade and complex ores are being studied at the University of Utah. The Arizona Copper Company is providing a twenty-ton leaching plant at Clifton, Arizona, for determining problems met with in leaching partly oxidized copper ores. Experimental work in volatilizing silver and lead from ores and reducing the gases to metallic bullion is being conducted in co-operation with Morris P. Kirk of Harbor City, California. Mr. Kirk furnished at his own expense the necessary plant and machinery.

Improved methods of mining, treating and marketing iron ores are being studied in co-operation with the North Carolina Geological and Economic Survey.

In co-operation with the Northwest Magnesite Company, the bureau is studying methods of producing high-grade caustic-burned magnesia. Investigations of methods of treating ores and producing coal are being made in conjunction with the Oregon Bureau of Mines and Geology. A safety and health campaign is being conducted, and improved uses of electricity and explosives are being studied, in co-operation with the Utah Industrial Commission.

A study of combustion of powdered fuels is being made in co-operation with the Combustion Engineering Corporation of New York. Efficient heating and ventilation methods and allied subjects are being investigated at Pittsburgh in co-operation with the American Society of Heating and Ventilating Engineers.

Possibility of utilizing Illinois coals instead of eastern coals for making gas, and mine ventilation and coal washing, are being studied at the University of Illinois. Washington and Alaska coal problems are being studied at the University of Washington. Answers to the usual wide range of coal questions are being sought at Pittsburgh by the bureau and the Carnegie Institute of Technology. The Pennsylvania Geological Survey is co-operating in the special work of sampling and analyzing Pennsylvania coals and making approximate heat determinations. Investigations concerning preparation of coal for shipment and marketing, securing of increased efficiency in use, and the development of improved grading and classification methods, are still being carried on in co-operation with the Tidewater Coal Exchange of New York and the Sewall's Point Coal Exchange of Norfolk.

Interesting investigations being carried on in co-operation with commercial concerns include: Exact facts regarding the use of liquid fuel in domestic heating in a device known as "Nokol," with the Steam Corporation of Chicago; efficiency of Trent processes for cleaning fuel, with the Trent Process Corporation of Washington, D. C.; use of natural gas in the home, with the Equitable Gas Company, the People's Gas Company and the Manufacturers' Light & Heat Company, all of Pittsburgh; practical application of Jefferies-Norton processes for the recovery of helium from natural gas, at Petrolia, Texas, with the Jefferies-Norton Corporation of Worcester, Mass.; explosive components for a detonating device, with the Dupont Company; smokeless combustion of bituminous coal, with the General Boilers Company of Waukegan, Ill.

WILSON URGES CONGRESS TO QUIT JUGGLING TAXES AND REDUCE THE BURDEN

SUGGESTING TO THE GOVERNMENT "the most profitable investment in the world—a billion dollars for a few picayunes," Robert G. Wilson, Chief of the Tax Division of the American Mining Congress, Washington, appeared before the Committee on Finance of the Senate in advocacy of a Federal War Tax Settlement Board and other measures to clean up the income and profits taxes for war years still outstanding.

"The solution of the problem of replacing the excess profits tax is right at the finger tips of Congress," declared Mr. Wilson. "My purpose in appearing before the committee is not to urge the consideration of any particular tax plan, but rather to call attention to the feasibility of actually reducing the volume of taxes.

"In April 1920, the American Petroleum Institute, the National Industrial Conference Board and the American Mining Congress, jointly representing about thirty other organizations, called a National Tax Conference at Chicago. Due to the dissatisfaction with the Revenue Act of 1918 then evidenced, a committee of fifteen was appointed to meet frequently and study the subject, with the view to presenting a committee report of recommendations for corrective legislation. That report has been issued in final form, following revision prompted by the second and third national conferences held in New York in October 1920 and January 1921. It is known as the 'Report of the Tax Committee of the National Industrial Conference Board on the Federal Tax Problem.'

"In Denver last November the American Mining Congress, at its twenty-third annual convention, unanimously adopted resolutions recommending the repeal of the excess profits tax. We did not advocate any specific substitutes at that time. The report of the National Industrial Conference Board Tax Committee, otherwise known as the Allied Tax Committee, had not been completed. The Mining Congress had two representatives on that committee; another member of the Mining Congress Tax Committee was an adviser to the conference committee. The delegates to the Denver convention were urged to communicate their suggestions to the Conference Committee.

ROBERT G. WILSON,

Chief of the Tax Division of the American Mining Congress, who appeared before the Senate Finance Committee in support of proposals to create a Federal War Tax Settlement Board, increase the personnel and efficiency of the Revenue Bureau and reduce future taxes.

"The present problem of federal taxation is not concerned alone with the urgent need for reformation of the revenue laws. No less important to the government and to industry is the prompt and decisive determination of war tax liabilities for prior years. Therein lies the possibility for a lowering of future taxes.

"Considerably more than a billion dollars of income and profits taxes, long past due, remains uncollected. A fraction of it never will be collected under any circumstances. Unless radical steps are taken immediately twenty percent or more never will be collected. A comparatively negligible investment at the present time should actually *save* the government a quarter billion dollars and bring in more than a billion dollars additional during the next two years—probably fully a billion and a half. The saving in interest alone would prove a highly successful return upon the investment. The total saving, including the salvage of taxes that are being lost in the mazes of computation and collection difficulties, should make the investment the most profitable in the world. That is the immediate and perhaps the most important consideration. There are other incentives.

"The prolongation of the volume of war taxation is sufficiently distressing without the indeterminate settlement of obligations incurred by business three or four years ago. We are mindful of the restriction upon industrial expansion, the worry and harassment of uncertainty and delay, the impending mass of complex litigation, and in general the whole gamut of economic waste and distress. Congress faces a heavy responsibility. Business is becoming impatient. The whole situation is becoming actually dangerous.

"The American Mining Congress suggests two remedies: First, the creation by Presidential appointment of a temporary board to be known as the Federal War Tax Settlement Board, authorized not only to pass upon and settle cases consequent upon the wartime period, but to compromise in simple equity the disputes that appear hopeless under interpretative application of the laws. Second, men and other means for the Income Tax Unit of the Bureau of Internal Revenue to function effectively.

"The Income Tax Unit is rapidly approaching chaos. The average wage paid to its 5,500 employes in Washington is but $1,650. That is the average paid to men who are supposed to be qualified to determine the correctness of million dollar taxes. No new men have been acquired since April 1. No funds are available for promotions due July 1. If no salary increases are made at that time a veritable army of the employes will seek positions elsewhere.

"Thirty-seven percent of the Income Tax Unit personnel resigned during 1920. This percentage is more significant than appears, for the reason that the 37 percent constitutes almost entirely a loss of the most able men, who have sacrificed whatever advantages may exist in governmental service for the advantages of employment by private interests, however temporary such new employment may be.

"The invested capital of 50,000 corporations remains to be determined for the year 1917 alone. For the year 1918, only 60 percent of all tax returns, both personal and corporate, have been investigated; for the year 1919 only 10 to 15 percent.

"A lowly eighteen hundred a year auditor can with little effort shake $100,000 per annum right out of the bushes; a more efficient auditor can produce millions. The Unit has assessed as high as $50,000,000 in additional taxes in one month; the additional assessment is now running about $30,000,000 per month. The hardest nuts to crack are now being reached. Both the government and the public will suffer if the decisions are not made by trained experts. God knows the interpretation by experts of the revenue acts of 1917 and 1918 is questionable enough as it is; if no relief is given the Bureau immediately the outlook for the future is appalling.

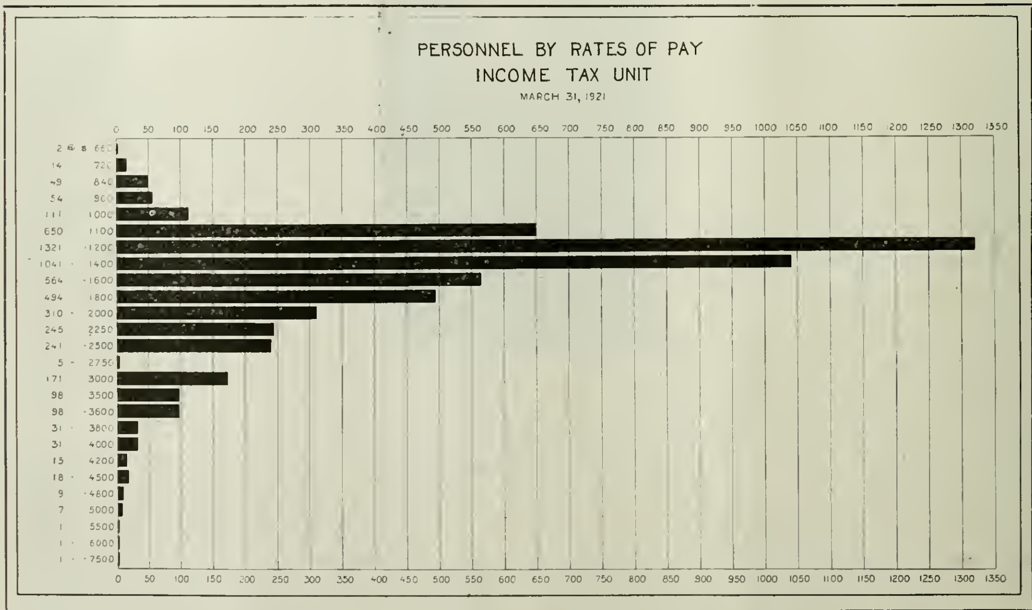
"My observation is that, while the Income Tax Unit is in a bad mess, it is at the same time a remarkably efficient organization. The figures given are significant of what could be accomplished with additional technical men and better working facilities. It is easy to appreciate that the still undetermined taxes are to issue principally from the most complex cases. The Income Tax Unit, in its distress over lack of employes and working equipment, has naturally referred first to the most easily adjusted returns. The Unit is operating today in four buildings in Washington; all but one of these are absolute fire-traps.

"The property loss by the San Francisco fire was about $300,000,000. The annual loss by fire in the United States is about $270,000,000. If a fire-brand were to set a match to that tinderbox known as Treasury Annex No. 2, the government would immediately sustain an irreparable loss of fully half a billion dollars through destruction of millions of returns and tons of important data required in the determination of taxes. Who would answer for that?

"Repealing the excess profits tax would involve a loss of revenue of about $500,000.000 per annum. That can be more than replaced by expedited tax collections and by immediate action to save to the government large sums that never will be realized at all if collection is further delayed. And the man who has paid his rightful tax expects that his neighbor shall be forced to do the same."

Speaking of the general sales tax, which has been the principal subject of debate during the Finance Committee hearings, Mr. Wilson expressed his personal opinion that there is no necessity for such a levy. "In any event," he declared, "the general sales tax can scarcely be honestly urged by capital. The Secretary of the Treasury has recommended the abolition of the excess profits tax upon corporations and reduction of the surtax upon incomes of the wealthy—not for sentimental reasons but for practical ones. The advocates of the general sales tax subscribe to that, and then ask that Congress remove the existing excise taxes upon the luxuries of the rich man and transpose them to the dinner pail—a tax off the diamond shirt stud and onto the bone collar button. Capital is overburdened with taxation today, overburdened to the extent that it is reacting to the disadvantage of labor through restricted industrial expansion, but capital is coming to Congress with clean hands. It is asking relief on entirely tenable grounds; it must be rid of the excess profits tax incubus; it must have more incentive for profitable activity, but its common sense does not allow it to expect billion-dollar imposts upon the absolute necessities of life.

"The real solution of the federal tax problem is lower taxes, not juggling of taxes. If the war-time rates can be made to yield all they should, and Congress has the opportunity and the power, genuine relief is in prospect. May I suggest that the beginning need not wait upon the general revenue program?"



BUILDING MATERIAL SHIPPERS SEEK AID OF PRESIDENT

Left to right, H. M. Keasby, Hollow Building Tile Association; Frederick Schwertner, attorney; Hugh Fullerton, American Mining Congress; W. M. Councill, Hollow Building Tile Association; E. Guy Sutton, National Association Sand & Gravel Producers; A. P. Sandles, National Crushed Stone Asssociation; Francis B. James, attorney; J. G. Barbour, National Paving Brick Manufacturers Asssociation.

REDUCED FREIGHT RATES NEEDED TO START BUILDING REVIVAL

THE HOUSING SHORTAGE was brought to the personal attention of President Harding a few weeks ago by representatives of building material manufacturers, who asked his intervention in behalf of immediate railroad rate reductions. Building materials are constructed largely out of mining products, and the interview with the President was arranged by the American Mining Congress. Following this conference, numerous conferences were held during the first three weeks of May with Daniel Willard of the B. & O. and other railroad heads. These negotiations are continuing.

Those who called upon the President were: Hugh Fullerton of the American Mining Congress; E. Guy Sutton, executive secretary, National Association Sand & Gravel Producers; J. G. Barbour, chairman Traffic Committee, National Paving Brick Manufacturers; H. E. Stringer, chairman Traffic Committee, American Face Brick Association; H. M. Keasbey and W. M. Council, Hollow Building Tile Association; Frank Carnahan, National Lumber Manufacturers Association; A. P. Sandles, secretary, National Crushed Stone Association; W. D. Lindsay, Gypsum Industries Association.

These representatives of the building industries presented the following memorial to the President:

MR. PRESIDENT.

Sir:

This memorandum is presented by national organizations of manufacturers and distributors of building and road materials as follows: Lumber, brick, building tile, sand, gravel, crushed stone, lime and plaster.

BUILDING AND ROAD MAKING MATERIAL INDUSTRIES STAGNANT.—Irrespective of the fact that there is an unprecedented demand for all kinds of construction, the building and road making industries are at a standstill.

There are many factors contributing to delay in the prosecution of building work. The chief cause of deferment is the excessive freight rates applying on that class of building materials which are heavy loading and of low value, such as sand, gravel, crushed stone, brick, lumber, building tile, lime and plaster.

JUSTIFICATION FOR REDUCTION OF RATES ON BUILDING AND ROAD MAKING MATERIALS.—Freight rates on building and road making materials have been increased an average of 110 percent since 1917, as compared with 75 percent applying on general commodities. In some instances the rates on building and road making materials are now in excess of their price at the point of production.

EXPEDIENCY OF REDUCING RATES ON BUILDING AND ROAD MAKING MATERIAL.—The rates on building and road making material have been advanced beyond the point which the traffic will bear, and thus shippers of these materials are denied their former markets and the carriers are deprived of a large volume of traffic, with a consequent loss of much-needed revenue, while the public is sorely in need of homes and highways.

The railroads have a vast number of cars and locomotives standing idle which could be utilized for carrying building materials.

There is imperative necessity for the immediate stimulation of some large industry which is national in its scope, in order to provide work for the unemployed. It is submitted that no other industry lends itself to the fulfillment of this mission in the same degree as the resumption of construction work, for the demand for building material is universal, Senator Calder's Committee stating that there is a crying need for over one million homes throughout the country.

NECESSITY FOR READJUSTMENTS ANTICIPATED.—In rendering its report in Ex Parte 74, the Interstate Commerce Commission gave cognizance to the necessity of readjusting rates to meet changing conditions and to remove hardships created by the hasty consideration of the case necessitated by the emergency involved. It was recommended that such readjustments be effected between the shippers and the carriers without appeal to the Commission. However, the shippers of building materials have not been able to prevail on the carriers to make proper revisions, and hence it appears that the public authorities must be requested to intervene in some manner.

NEED FOR PROMPT ACTION.—It is well known that proceedings before the Commission are not only expensive, but entail long and unavoidable delays. On account of the fact that two months of the normal building season have already passed, and same will end early in November, there is need for immediate action. For this reason the usual course of procedure in appealing for relief through the Interstate Commerce Commission can not be contemplated. The public is demanding prompt action.

We earnestly request your advice and assistance in bringing about an expeditious handling of the matter.

GOV. CHARLES R. MABEY
Of Utah. Governor Mabey is interested in all movements for development of the west. He plans to head a delegation to the next Mining Congress Convention.

GOV. THOMAS E. CAMPBELL
Of Arizona, who states that three-hundred thousand acres will be reclaimed and thirty-thousand horse-power developed in the Salt River Valley.

EX-GOV. WILLIAM SPRY
Of Utah, now Commissioner of the General Land Office. He was formerly chairman of the Committee on Legislation and Publicity of the Western States Reclamation Association.

THE WEST URGES WORLD'S GREATEST RECLAMATION PROGRAM

GOVERNORS of five western states called on Secretary of the Interior Fall on May 17 and President Harding two days later to urge a comprehensive program for reclamation of arid lands and to invite the government to appoint representatives on the Colorado River Interstate Commission. They were Governor Emmet D. Boyle of Nevada, Governor Louis F. Hart of Washington, Governor D. W. Davis of Idaho, Governor Thomas E. Campbell of Arizona and Governor Charles R. Mabey of Utah. A score of other officials of western states were members of the company, while ex-governor William Spry of Utah, now the commissioner of the General Land Office, and Arthur P. Davis, director of the Reclamation Service, also participated in the conference.

Governor Davis is the head of the Western States Reclamation Association. He came to Washington primarily to urge favorable consideration for the Smith-McNary bill, which provides for increased expenditures and general elaboration of the governments' whole reclamation program in the western states. He and other members of the delegation spent approximately a fortnight in Washington interviewing members of Congress and administrative officials, and before leaving expressed satisfaction with the results attained.

Commissioner Spry was formerly chairman of the Committee on Legislation and Publicity of the Western States Reclamation Association. The objects of the organization are the same as those of the government in respect to development of arid lands into productive areas. As explained by Governor Spry, the plan of reclamation contemplated in the Smith-McNary bill is the greatest undertaking of its kind in the history of the world. It contemplates the conversion of approximately twenty million acres of unproductive land into a veritable garden spot and would involve a two-billion dollar turnover in twenty years. The Smith-McNary bill appropriates $250,000,000 to be expended over a short term of years, but to be in the form of a loan. Various irrigation districts, as development progresses, are to be bonded, but for not in excess of half of their value as appraised by the Federal Farm Loan Board. Returns from the irrigation projects are to be credited to the original $250,000,000 so that the whole will be retained as a revolving fund, and at the expiration of twenty years repayment to the government would begin. It is these transactions which, as Governor Spry said, will involve a turnover of two billion dollars in twenty years. The Smith-McNary bill involves a complete plan, and if it is passed no further legislation directed towards the reclamation of western lands will be required.

In many western states, the annual rainfall amounts to five inches or less. Twelve inches is the minimum amount which will suffice for the dryest of dry farming; fifteen is better. Irrigation projects as contemplated will distribute twenty-four inches of water over the land every year, about five distributions a year being the usual method.

But successful irrigation projects include not only facilities for watering one year's crop, but a second year's crop if necessary. Hence the construction of immense reservoirs as insurance against drouth is included.

One of the largest areas involved in western reclamation plans is that through which the Colorado River flows. The Colorado River possesses almost limitless potentialities for

GOV. LOUIS F. HART
Of Washington, who believes reclamation of the arid lands of the west is at one and the same time the country's greatest opportunity and its greatest duty.

GOV. D. W. DAVIS
Of Idaho, head of the Western States Reclamation Association, who led the delegation of western state executives which called upon President Harding.

GOV. EMMET D. BOYLE
Of Nevada. He delivered one of the principal addresses at the last convention of the American Mining Congress and is planning to attend the next one.

power and irrigation development. It discharges annually from nine to twenty-two million acre-feet of water—or an amount sufficient to cover to a depth of one foot that many acres. The governors and others of those who visited Washington believe it is possible, through proper co-operation between the states and the national government, to utilize this great volume of water so as to reclaim from three to five million acres of land, making them worth from $200 to $1,500 each, and at the same time to produce between one and two million horse-power of electricity.

"The Colorado River and the Colorado River Basin form the greatest undeveloped natural resource in arid America," Governor Boyle said to a representative of the Mining Congress Journal.

To avoid complications which have grown out of the use in the past of interstate streams for developmental purposes, the legislatures of each of the states through which the Colorado flows created commissions to cooperate in an effort to determine, in advance of development in the Colorado basin, the fair rights of each state affected. The members of these commissions, together, compose the Colorado River Interstate Commission.

Governors of states affected by Colorado River development, or their representatives, met in Denver May 9-11, and adopted resolutions that the rights of the various states be determined immediately and that the national government be invited to have representatives on the interstate commission. Two reasons for active participation of the federal government exist; (1) because of the facilities already possessed by the government in the Reclamation Service, and, (2) because the river is an international stream and the diversion or utilization of its waters on a large scale will naturally call for negotiations between the State Department and Mexico.

Practically every member of the Denver conference came on to Washington. It is considered certain that the government will have representation on the Colorado River Interstate Commission, as a bill to this effect, brought to Washington by the western delegation, received the approval of President Harding and Secretary Fall and was introduced by Senator Bursum, of New Mexico.

The mining industry is deeply interested in any plan for the reclamation of arid western lands. Having heavy investments, they will naturally share in the general prosperity which is bound to result from the conversion of a twenty-million-acre wilderness into a food-producing area of equal dimensions. They will likewise be able to take advantage of the hydro-electric power which will be developed.

Governor Campbell of Arizona, who has long been deeply interested in reclamation projects, states that three-hundred thousand acres will be reclaimed and thirty-thousand horse-power developed in the Salt River Valley alone.

Governor Hart of Washington looks upon the Smith-McNary bill as one of the greatest pieces of constructive legislation ever proposed and upon reclamation as at once the country's greatest opportunity and greatest duty. "Irrigation is an absolute necessity if we are going to produce enough food to feed the American people," he said.

Continuing, Governor Hart said: "Twenty million acres in this country are arid, but if properly watered they will not only prove the most productive farm lands in the world but will open an absolutely new agricultural field and will be a great inducement to soldiers and others unemployed to take up life on the farm. The estimated cost of irrigating this land is $100 per acre. The production question is perhaps the most important problem that America now faces, and these regions must not be allowed to remain as wasted and unused lands as in former years. With an enormous percentage of the population unemployed it is imperative that these fields be opened."

PITTMAN SILVER PURCHASE ACT WILL REMAIN IN FORCE

EVERY SILVER MINE in the United States would be closed down now except for the Pittman Act, in the opinion of Senator Key Pittman of Nevada. But the measure will not only remain on the statute books, he believes, but conceivably may operate forever.

"As long as the world market is below $1 an ounce the government will continue to buy American silver at $1

SENATOR KEY PITTMAN

an ounce," Senator Pittman said to a MINING CONGRESS JOURNAL representative. "It would take about three and one-half years to replace the 208,000,000 ounces of silver involved in European purchases, but when European countries begin to produce again the price of silver will rise above $1 an ounce and American silver will be sold on the open market. It is therefore possible that the government fund for the purchase of silver at this figure may never become exhausted."

It is Senator Pittman's belief that such agitation for repeal of the act as has been observed was instigated by foreign financiers and that it will accomplish nothing. For Congress to repeal the measure he holds would be an act of dishonor, in view of the agreement entered into by representatives of producers before the law was introduced, and such action on the part of Congress is inconceivable. But if it were possible for such an attempt to be made, and it appeared there existed a possibility of its succeeding, Senator Pittman said he and three other western Senators would talk it to death.

"I know of four Senators, including myself, who will speak six hours each day for a year, if necessary," he said. "It is within our power to prevent the repeal of the Pittman Act by talking, and if necessary we will talk."

SALT LAKE BANKERS OPPOSE REPEAL OF PITTMAN ACT

FOLLOWING an address delivered by W. Mont Ferry, managing director of the Silver King Coalition Mines Company, the Salt Lake Clearing House Association recently adopted resolutions strongly opposing repeal of the Pittman Act. Mr. Ferry was the author of the resolution.

Mr. Ferry in his address explained that silver purchases under the Pittman law amount merely to a restoration to the treasury of bullion which was removed for war purposes, and that the government is not losing anything. He likewise showed that silver producers were not making any profit, to speak of, out of the transaction, since the government by laying an embargo during the war prevented them from taking advantage of market prices by exporting the metal. The government at that time, and before agreement in behalf of the Pittman law was entered into, made a solemn promise to buy silver at $1 an ounce from domestic producers until the entire 208,000,000 ounces purchased by England was replaced.

SAFETY AND HEALTH CAMPAIGN IN UTAH MINING CAMPS

CARELESSNESS on the part of employes resulted in such a large number of accidents, especially fatalities, that the Utah Industrial Commission recently called in the United States Bureau of Mines to co-operate in conducting a safety and health campaign. The state commission found that approximately 40 percent of accidental deaths was due to carelessness, as against only 10 or 12 percent which could be charged to faulty conditions in the mines.

A mine rescue car was sent on a tour of the mining districts, two weeks being allotted to each camp, where meetings were held and training classes conducted. The principal channels through which educational work was carried on were safety and health rallies, foremen's meetings and the pledging of safety and health scouts. Results obtained at the first seven camps included 1,219 pledges of safety and health scouts, attendance of 1,790 at safety rallies, attendance of 170 at foremen's rallies, 376 trained in first aid and 42 trained fully in mine rescue work. The campaign continues.

SILVER PURCHASES.—The Treasury Department on May 4 had purchased under the Pittman Law 50,231,197 ounces of silver and coined 6,736,000 dollars. April coinage consisted of 4,370,000 dollars, 1,977,000 nickels and 2,424,000 one-cent pieces. During the same month 6,225,000 nickel pieces were coined for Colombia.

MELLON TO DETERMINE FATE OF GOLD MINING INDUSTRY

PRIOR to the advent of the new administration the Treasury Department repeatedly expressed opposition to the bill introduced by Congressman Louis T. McFadden, Chairman of the Banking and Currency Committee of the House of Representatives, to equitably adjust the cost-and-price equation between the producer of new gold and the industrial consumer of gold. The report of the Special Gold Committee of the Treasury Department under Secretary McAdoo and statements by Secretary Houston all referred to the rapid return to normal economic conditions, in which event the gold mining industry would return to normal, and that therefore there was no need for temporary relief. These were poor prophecies, of which the actual conditions through which we have passed are proof. The output of gold has

CONGRESSMAN LOUIS T. McFADDEN

continued to decline, from $101,000,000 in 1915 to $49,500,000 in 1920, because of increased costs of production.

Congressman McFadden introduced in the new Congress H. R. 5025, which contains amendments lessening the time period in the bill which he introduced in the previous Congress, from five to three years, and granting full authority to the Secretary of the Treasury to terminate the act on three months' notice in event of a more rapid return to normal conditions than that contemplated in the bill. These changes beyond any question of doubt fully protect the government's interests from any change in the economic conditions, and successfully dispose of arguments advanced by those who are of the opinion that we are to return to normal conditions in the immediate future.

In a matter which so greatly involves the Treasury Department both as to policy and administration, Congress would not be justified in enacting this legislation unless it met with the unqualified approval of the Secretary of the Treasury. Chairman Fordney of the Ways and Means Committee, realizing this fact, referred the bill to Secretary Mellon for an opinion, and his reply is awaited by the committee and the public. The following letter was sent by Mr. J. F. Callbreath, Secretary of The American Mining Congress, to the Hon. Andrew W. Mellon, Secretary of the Treasury, to inform him of the serious condition of the industry and the importance of his reply to Chairman Joseph Fordney of the Ways and Means Committee, upon which rests the fate of the bill, the fate of the gold mining industry, and the preservation of the developed gold ore resources of the nation.

May 16, 1921.

Hon. Andrew W. Mellon,
Secretary of the Treasury,
Washington, D. C.

My dear Secretary Mellon:

Will you permit me to present briefly to you a statement of present conditions concerning the McFadden Bill, H. R. 5025, in order that your reply to the inquiry of the Ways and Means Committee of the House of Representatives may be made with full appreciation of its significance.

It is not necessary to discuss the great importance of the maintenance of the gold standard, or the dangers involved if the gold reserve of the world is not sufficient to maintain public confidence in the ultimate redemption of whatever volume of paper money is based thereon. The credits of the world have been increased out of all proportion to the increase in the world's gold reserve.

In the United States the production of gold declined from $101,000,000 in 1915 to $49,500,000 in 1920. This decline will be accelerated if it shall be determined that no aid is to be given to the gold mining industry, because many mines will close if operators are now told that their difficulties must adjust themselves as deflation progresses and commodity prices return toward normal. The closing of these mines means the permanent loss of a large part of the American developed gold ore resources and the capital invested therein.

The costs of gold production have not decreased within the last year, because any decreases in the costs of supplies and labor have been more than offset by a 35 percent increase in freight rates, a 10 percent increase in the cost of powder, and radical advances in the cost of power.

The American Mining Congress represents the mining industry as a whole, less than 10 percent of its members being directly connected with the gold producing industry. It has endorsed provisions of the McFadden Bill because these seemed to offer an equitable solution of a difficult problem, not only to make possible that the gold mining industry be maintained, but also that those agencies which transform gold from a basis of currency into luxuries be forced to pay the actual cost of producing their raw material. We have believed that increasing the gold reserve tends to the maintenance of the nation's business and the obligations which naturally belong to a creditor nation to extend foreign credits necessary to keep its industrial machinery in operation.

It has been intimated that the American Bankers Association is opposed to the enactment of the McFadden Bill. We attach hereto a statement giving, as we understand it, the history of the American Bankers Association's connection with this question, and from this record we believe that the Association as a whole favors temporary governmental aid to the gold producing industry. If the McFadden Bill is not the proper measure, it would seem incumbent on those who oppose it to suggest some constructive measure to bring about the results approved in the resolutions adopted by the Chicago and St. Louis Conventions of the American Bankers Association.

The American gold mining industry faces destruction to an extent involving the national welfare unless prompt governmental relief is provided. We are advised that your position for or against the McFadden Bill to be indicated in your reply to Chairman Fordney, will in effect determine its fate.

Very truly yours,

THE AMERICAN MINING CONGRESS,

(Signed) J. F. CALLBREATH,

Secretary.

The American Bankers Association at its Forty-fourth Annual Convention held in Chicago on September 27, 1918, adopted unanimously the following resolution:

"WHERLAS, The gold production of the world is rapidly decreasing and

"WHEREAS, The only form of relief that will prove effective and can be applied promptly, is action by the United States Government in such form and by such methods as may be deemed fit and proper under the circumstances, and

"WHEREAS, Gold is the standard of value and the basis of all credit, and it is vitally important to the financial and commercial life of the nation and of the world; now, therefore, be it

"*Resolved*, That the American Bankers Association in convention assembled, respectfully request and urge upon the government of the United States the desirability of maintaining the production of gold to at least its pre-war volume, and ask that steps be taken immediately to that end; and be it further

"*Resolved*, That the secretary of this Association be, and he hereby is instructed to send a copy of this resolution to the President of the United States, Secretary of the Treasury, and Secretary of the Interior, advising them of its adoption; and be it also further

"*Resolved*, That considering the great importance of this subject, this convention recommends to the Executive Council that the matter be referred to the Federal Legislative Committee and the Currency Commission for an exhautive study and such action as may be deemed necessary."

At the Forty-fifth Annual Convention of the American Bankers Association the following resolution was adopted unanimously on October 2, 1919, at St. Louis:

"WHEREAS, The gold production of the United States, which declined so rapidly during the war period, has since the signing of the armistice still further declined because of the extreme economic pressure to which the gold mining industry has been subjected, and

"WHEREAS, Gold is the standard of value and the basis of all credit, and it is vitally important to the financial and commercial life of the nation that the monetary reserve be protected, now, therefore, be it

"*Resolved*, That the American Bankers Association, in convention assembled, respectfully requests and urges upon the Government of the United States the desirability of maintaining the domestic production of new gold in sufficient volume to satisfy the present anticipated trade requirements for this metal, and asks that steps be taken immediately to that end, and be it further

"*Resolved*, That the secretary of this association be, and hereby is, instructed to send a copy of this resolution to the President of the United States, the Secretary of the Treasury, and the members of the Senate and the House of Representatives of the United States' advising them of its adoption, and be it also further

"*Resolved*, That, considering the great importance of this subject, this convention recommends to the Executive Council that the matter be referred to the Federal Legislative Committee and the Currency Committee for an exhaustive study and such action as may be deemed necessary."

In response to these resolutions Representative Louis T. McFadden, chairman of the sub-committee of the Banking and Currency Committee of the House of Representatives, introduced H. R. 13201 on March 25, 1920.

At the Executive Council meeting of the American Bankers Association held in Pinehurst April 28, 1920, notwithstanding that both the Federal Legislative Committee and the Trust Company Section of that organization were prepared to favorably report upon the bill, it was referred to a committee of three for further investigation. An unfavorable report was recommended by this committee of three, which was presented to the Forty-sixth Annual Convention of the American Bankers Association by Mr. Lawrence E. Sands, a member of the committee, at the meeting held in Washington October 18, 1920. Following the reading of the report Mr. McFadden made a reply, whereupon a motion was adopted to refer both the report and the reply thereto to the Economic Policies Commission for further investigation and action.

At the recent meeting of the Executive Council held May 2-6, 1921, at Pinehurst, North Carolina, the Economic Policies Commission did not endorse the adverse report.

CONGRESSMAN McFADDEN EXPLAINS NEW GOLD BILL

REPRESENTATIVE Louis T. McFadden, chairman of the Banking and Currency Committee of the House of Representatives, who introduced H. R. 5025, a bill to conserve the gold ore resources of the nation, has given out an interview in support of the measure. The measure will be known as the McFadden Bill, as was its predecessor which failed of enactment at the last session.

"The bill provides revenue," said Mr. McFadden, "from an excise of 50 cents per pennyweight of fine gold contained in manufactured articles, to be collected at the time of sale, and for a premium of 50 cents per pennyweight to be paid to the producers of newly mined gold in the United States and its possessions. The government is fully protected under the provisions of the bill from the presentation of other than newly mined gold to receive the premium. The bill differs from H. R. 13201 introduced by me in the last Congress, in that the period has been lessened from five to three years, and that the Secretary of the Treasury is granted full authority to terminate entirely the provisions of the act on three months notice in the event of a return to normal economic conditions prior to the expiration of the same. Exporters of articles containing gold have been exempted, as they were from the payment of the luxury tax, in order not to interfere with foreign competition. Revenue will be derived on all gold articles of foreign manufacture sold in this country."

Mr. McFadden emphasized that "The industrial consumers of gold have been and are receiving gold at the pre-war price. They will continue to receive bullion from the mint at the monetary price of $20.67 per ounce, but through the payment of the excise when the manufactured article is sold they will be paying more nearly the production cost of gold and thereby lessen the subsidy which in effect they now enjoy. The premium to the produce for new gold is a compensation for the increased cost of production and cannot be construed as a subsidy. The bill provides an equitable adjustment between the producer and the industrial consumer of gold."

In reviewing the history of this legislation Mr. McFadden stated that "Extensive hearings were conducted in the last Congress on this bill, and it was reported favorably by the sub-committee of the Ways and Means Committee before adjournment. Increases in freight and power rates have more than offset any declines in wages and materials consumed in gold mining. Because of the emergency confronting the gold mining industry, the enactment of this bill should be expedited."

HELENA COMMERCIAL CLUB GETS BEHIND McFADDEN BILL

MEMBERS OF CONGRESS during the last fortnight have received from the Commercial Club of Helena, Mont., a strong letter urging support of the McFadden Bill. It was prepared by the Mining Committee of the Club. Copies were also sent to western chambers of commerce. The arguments advanced are considered convincing. The letter follows:

"Gold is the basis of American finance.

"In 1915, gold to the value of $101,000,000 was produced in the United States.

"In 1920, the production was $49,500,000.

"In 1921, the output will be less than $40,000,000.

"The gold industry in the United States is dying fast.

"At the present price for gold, few, if any, gold properties can afford to operate in this country.

"All the gold mines in Montana are either shut down or are losing money so rapidly that they must soon close.

"If the United States wants United States gold, the McFadden bill must be passed.

"Gold is the only commodity that has not increased in price and yet the mining of gold now costs 85 percent more than in 1914. Among the principal factors entering into gold production are the following:

	Prices in 1914	Prices in 1921		Prices in 1914	Prices in 1921
Powder	12.50	28.50	Flour	3.75	5.25
Caps	.85	2.50	Bacon	.20	.37
Fuse	.75	1.35	Canned corn	.10	.15
Shovels	1.00	2.00	Canned tomatoes	.12½	.15
Picks	1.00	1.75	Canned Beans	.15	.20
Steel Rails	3.00	5.25	Labor	3.50	5.00

"Freight on raw ore has increased 50 percent; on finished product the increase has been 120 percent.

"In 1919, the United States mint sold for consumption in manufactures and the arts, gold to the value of $76,837,600. Your American mines cannot produce enough gold for these industries nor can they produce enough gold for the Treasury Department for sale at the present standard of $20.67.

"The United States government fixes the price at which gold can be sold. The present price will strangle the gold industry to death. The only hope for American gold today is the McFadden bill.

"We ask your support and vote for the measure because it means life or death to our gold industry.

"The west can pay America's war debt if you give the gold industry a fighting chance. The wealth is in the ground. Give us a chance to take it out."

INTERIM TARIFF PROTECTION PROVIDED BY LONGWORTH RESOLUTION

REPRESENTATIVE Nicholas Longworth of Ohio has introduced a resolution to settle the question as to when the provisions of new tariff legislation shall become effective. It is designed to give interim protection during the time between the passage of a tariff bill and the date of effectiveness as provided therein.

The Longworth resolution provides that immediately upon the introduction in the House of the proposed general tariff revision, all duties therein levied shall become effective at once pending final passage and approval by the President; that wherever the duty finally levied shall be lower than that which was at first proposed the difference in tariffs collected shall be refunded to the importer; that wherever the rate finally adopted is higher than that first proposed there shall be no further collection of duty.

The Longworth resolution is an emergency measure designed to prevent excessive dumping of foreign material after the proposed new rates of duty become known and before they become effective. It is considered practically certain that this resolution or some similar one will be passed by Congress.

ROLLA EXPERIMENT STATION COMPLETES FLUORSPAR INVESTIGATION

THE FIRST completed investigation made by the Rolla experiment station of the Bureau of Mines was reported within the last month. It related to the treatment of fluorspar, and results are regarded by Dr. H. Foster Bain, director of the Bureau, as very important.

Fluorspar abounds in southern Illinois and western Kentucky. It contains small quantities of lead and zinc and larger quanties of calcite and silver. In the past the material has been subjected to the ordinary wet concentration process, which made it possible to take out the lead. It was noticed that there was left a fine middling which included calcite, and the problem before the Rolla station was in regard to the treatment of this material.

Flotation and other methods were studied. One investigator noticed that parts of the material adhered to the bottom of an enameled white pan and wondered why. Static electricity came to his mind. So he procured a static machine and made some tests, and found that by an electrostatic process there could be produced from the low-grade material which is abundant an extremely high-grade fluorspar product, one for making hydro-fluoric acid and for other chemical work.

A technical report of the work has been placed before the mining companies involved and engineers engaged in turning out commercial fluorspar products. The country's fluor-spar products in 1919 were worth $3,102,000, of which $2,900,000 worth came from the Kentucky-Illinois field. The value of last year's output was much higher.

GOODING ON TARIFF.—The mines can prosper without protective tariff, providing they can get cheap labor—but who wants to see labor poorly paid? Senator Gooding, of Idaho, does not. In an address to the Senate May 10 he said: "Give the manufacturers, the farmers, the miners of this country labor as cheap as it is in foreign countries and they will not need any protection, for they will be able to compete with the whole world. But few, if any, of our industries can exist long without protection if the American scale of labor is to be maintained. I am unable to understand the man who would be willing to see labor in this country forced to accept the measly pittance that is paid to labor in the Old World."

MINING CONGRESS INTERVENES IN PERCOLATING WATERS SUIT

AT THE REQUEST of the Utah Chapter, the American Mining Congress joined with the petitioner in the case of the Snake Creek Mining and Tunnel Company against the Midway Irrigation Company in a petition to the United States Supreme Court for a writ of certiorari to bring the case up from the United States Circuit Court of Appeals for the Eighth Circuit.

The Snake Creek Mining and Tunnel Company drove a tunnel a distance of 14,500 feet. At various points in the progress of the tunnel, water-flow was encountered, until, at the trial before the district court, 6,454 gallons of water had developed. The issue is whether the tunnel company developing this water owns the water or whether it belongs to the irrigation company which had appropriated the flow from a water-shed known as Snake Creek, from which this tunnel is driven.

The circuit court decided in favor of the Tunnel Company. The circuit court of appeals reversed the decision. Because the issue involved is of interest to the entire mining industry, the American Mining Congress joined with the mining company in asking the Supreme Court to rehear the case. The issue is of public interest because if it is true that this water belongs to the irrigation company it would be possible for irrigation companies to enjoin the driving of tunnels by mining companies anywhere because of the probability that such a tunnel might divert water from their use or from one water-shed to another.

The petition filed by the American Mining Congress through Secretary J. F. Callbreath, as a friend of the court, is as follows:

MOTION

"Comes now J. F. Callbreath, and showing to the court that he appears herein as counsel for the American Mining Congress, a corporation organized for the purpose of promoting the welfare of those engaged in the mining industry, states that the decision of the Circuit Court of Appeals in this case affects the interest generally of persons and corporations engaged in such industry in all sections of the country where water is used for irrigation purposes; that said decision is a radical departure from the rule of decision which has hitherto prevailed with reference to the ownership of percolating waters encountered and developed as an incident to certain mining operations.

"Wherefore said J. F. Callbreath hereby moves the court for leave to submit as amicus curiae the following suggestions in support of the petition for a writ of certiorari herein.

J. F. Callbreath,
As Amicus Curiae."

SUGGESTIONS

Concerning the Importance to the Mining Industry of the Decision of the Circuit Court of Appeals Herein

"The American Mining Congress is a non-profit corporation organized to promote the welfare and to advance the interests of individuals and corporations engaged in the various branches of the mining industry throughout the United States. It has no pecuniary interests whatever in this litigation and is only interested in the questions decided by the Circuit Court of Appeals and in the nsequences of such decision as they affect the mining industry.

"The facts of the case being fully and accurately stated in petitioner's brief, it is believed to be unnecessary to repeat them here or to make any further reference to them other than to say that the waters in question were conclusively shown to be percolating waters encountered and developed by petitioner by means of a tunnel driven by it into a mountain in the State of Utah, in the vicinity of which mountain flowed a surface stream whose waters had been appropriated for beneficial purposes by the respondent Midway Irrigation Company.

"The District Court decreed that the petitioner was the owner of the waters so developed by it, but this decree was by the Circuit Court of Appeals reversed, and the right to the usufruct of said waters was awarded to said respondent.

"At the time said percolating waters were collected by means of petitioner's tunnel the statutory law of the State of Utah provided, and the decisions of the court of last resort of said State uniformly held, that percolating waters developed by means of a tunnel became the property of the owner of the tunnel in accordance with the rule at common law.

The Great Public Importance of the Questions Involved

"The necessary result of the decision of the Circuit Court of Appeals is to affirm the contention that the appropriators of the waters of a certain stream acquire an easement in the lands through which these waters percolate before they reach the surface and that such appropriators have the right to insist that such percolating waters may not be intercepted in such manner as to divert them from the surface stream. It is submitted that such ruling, if generally adopted, would very greatly injure the mining industry and retard, if not prevent, mining development in certain sections of the country. See *Crescent Mining Company v. Silver King Mining Company*, 17 Utah, 444, at page 452.

"The waters secured as an incident to the construction of tunnel and other underground excavations in connection with mining operations are often of great value and constitute an important item in estimating the feasibility of such improvements. For instance, in the instant case the waters in controversy are valued at more than $40,000. Furthermore, it frequently happens that min'ng operations cannot be carried on at all until the mines or mining properties are drained. It also frequently happens that percolating waters when collected and conveyed to the surface in these mining operations cannot be delivered into the streams of which they are conceived to be the source of supply.

"Under the rule adopted by the Circuit Court of Appeals this character of diversion of underground percolating waters would constitute an invasion of the rights of such appropriators of the waters of the surface streams which ordinarily would be attended with such irreparable consequences as to entitle the injured party to an injunction. The inevitable result of this would be to put a stop to the mining operations concerned.

"In this connection I desire to adopt and respectfully urge the points discussed at pages 54 to 63, both inclusive, of petitioner's brief.

"Respectfully submitted,
J. F. Callbreath,
As Amicus Curiae."

TRI-STATE CHAPTER CONTINUES GIVING AID TO UNEMPLOYED

AT THE LAST MEETING of the Tri-State Chapter of the American Mining Congress, held at Picher, Oklahoma, the giving of relief to unemployed mine workmen was again the main subject of discussion. Secretary Richard Jenkins made a report showing that $2,386 had been paid to men who were given employment in road work. The men are paid in food certificates.

At the time of the meeting four men with teams and five without teams were being employed in the vicinity of Hockerville and five men with teams and six without teams were employed at Picher. These men were given work in the construction of a building for the Chanute Spelter Company.

Appointment of a committee to make arrangements, if possible, for construction of a highway from Picher to Zincville was authorized. The road work will provide employment for a large number of men.

BULKELEY WELLS HEADS COLORADO METAL MINING BOARD

COLORADO METAL MINERS are now taxing themselves to "create a fund for the benefit of the metal mining industry." The money, variously estimated at from $15,000 to $20,000 a year, will be expended by a Metal Mining Board which has been appointed by the governor and which has already organizeed and begun its work.

The law authorizing collection of a tax of one-tenth of one percent upon all metal mining property and creating the board, passed by the recent legislature, had the backing of the Colorado Chapter of the American Mining Congress and the Colorado Metal Mining Association, which include ninety percent of the state's operators.

The governor appointed the following board: Bulkeley Wells, manager of the Smuggler Union; George M. Taylor, manager of the Portland Gold Mining Company at Cripple Creek; Fred Carroll, manager of the Atlas Gold Mining Company at Ouray; R. N. Henderson of Breckinridge, manager of the Wellington Mines Company; William Loach, manager of the Wolf Tongue Mining Company at Boulder; Jesse F. McDonald, manager of the Down Town Mines Company, Leadville; Charles Anderson, manager of the Smuggler Leasing Company, Aspen; E. L. Young, manager of the Sunnyside Mining and Milling Company, Eureka, and Charles Chase of Denver, manager of the Liberty Bell at Telluride.

The board elected as chairman Bulkeley Wells, expresident of the American Mining Congress, and as secretary M. B. Tomblin, secretary of the Colorado Chapter of the American Mining Congress. The board decided that its committees should consist of three members each, one member to be a member of the board, who would be chairman, and the other two members to be appointed by him from among the non-member operators. Fred Carroll was made chairman of legislation; R. M. Henderson of transportation, Charles Chase of treatment of ores and concentrates, William Loach of materials and supplies, and Bulkeley Wells of power service. Mr. Henderson announced the completion of his committee by the appointment of George E. Collins, governor of the Colorado Chapter of the American Mining Congress, and George A. Stahl, of the Vindicator Consolidated Coal Mining Company.

President Taylor, of the Colorado Metal Mining Association, announced that in so far as possible the association's committees would have the same membership as committees of the Metal Mining Board.

The success of the Colorado Stock Growers' Association, functioning through the State Stock Inspection Board and supported by a tax of one-fifteenth of a mill upon all taxable property in the state, is accredited with having suggested to the operators the wisdom of the law creating the Metal Mining Board and levying a tax on metal mining property.

The members of the Metal Mining Board will work without compensation of any kind. The board is authorized to make "such investigations regarding the prospecting for, mining, production, transportation, buying, selling, treatment or reduction of metalliferous ores, as well as economic conditions relating thereto, and to make such investigations concerning the industry as they shall deem expedient or necessary." The board is given access to the files and records of all state and county departments.

The operations of the board will in no way conflict with the duties or functions of the Colorado Bureau of Mines or duplicate the work of any other state department. On the other hand, the board will co-operate with all other departments in all matters affecting the metal mining industry. Its activities will be confined to economic problems affecting the industry; present state agencies are concerned only with physical or operating problems.

Those who advocated creation of the Metal Mining Board urged the point that the rehabilitation of the metal mining industry, which formerly maintained the highest rank in Colorado, involved problems of freight rate adjustments both intrastate and interstate, smelter or reduction charges, equitable mine taxation laws and other questions demanding investigations beyond the means or the power of individuals and voluntary organizations. The board will not supplant any existing agency, but will function with state and county organizations to broaden and extend the work now carried on by voluntary effort.

Committees of the board were instructed to plan their work immediately and report at the next meeting. Meetings will be held quarterly, or oftener at the call of the chairman.

MINING EXPOSITION CARRIES APPEAL TO NORTHWEST OPERATORS

UNSTINTED CO-OPERATION is being vouchsafed the American Mining Congress by the Northwest. The International Mining Convention, meeting in Portland, Oregon, adopted resolutions endorsing the forthcoming National Exposition of Mines and Mining and calling upon the Northwestern States and British Columbia to participate, and also passed a resolution approving the stand taken by the Mining Congress in the Minerals Separation case. Delegates from Washington, Idaho, Montana, Utah, Nevada, California, and Oregon participated in the meeting.

Only a short while before the Portland meeting, resolutions of like intent were adopted at Spokane.

The resolutions adopted by the International Mining Convention follow:

American Mining Congress

WHEREAS, it is important to the mining industry that public confidence in mining be re-established through organized educational propaganda; and

WHEREAS, a widespread and exact understanding of the importance, hazards and methods of mining should act as a deterrent upon restrictive or destructive legislation as affecting the industry.

NOW, THEREFORE, BE IT RESOLVED, that the plans of the American Mining Congress for a national exposition of mines and mining equipment, to be held in Chicago, Illinois, October 17th to 22nd, 1921, are hereby endorsed and the Northwestern States and Provinces of British Columbia are urged to participate in said exposition and to contribute to its success.

Approving Mining Congress Stand on Minerals Separation

WHEREAS, the Federal Trade Commission is maintaining proceedings against the Minerals Separation, North American Corporation; and

WHEREAS, The American Mining Congress has lent its assistance in developing and presenting evidence in connection with this proceeding;

NOW, THEREFORE, BE IT RESOLVED, by the Third Annual International Mining Convention, assembled at Portland, Oregon, April 5–9, 1921, with delegates present from all northwestern states, California and British Columbia.

That it hereby commends the proceeding of the Federal Trade Commission against the Minerals Separation, North American Corporation, and indorses and approves the action of the American Mining Congress in supporting the commission's proceeding; and

BE IT FURTHER RESOLVED, That mining men of the Northwest generally pledge assistance to the officers of the American Mining Congress in their efforts to remove what constitutes a serious and lasting menace to the mining industry.

LOOK TO FALL FOR JUST AWARDS IN WAR MINERALS CASES

CONFIDENCE IN SECRETARY FALL was expressed by the American Mining Congress, as the representative of war minerals claimants, in a formal communication sent during the last month. For the purpose of keeping the record clear, the Mining Congress notified the Secretary that several hundred claimants were dissatisfied with the awards approved by his predecessor and that they still adhered to their intention of seeking the right of rehearing upon appeal.

It has now been almost a year since the Mining Congress and scores of claimants appeared before Secretary Payne and made vigorous objection to the action of one of the members of the War Minerals Commission in personally interviewing Congressmen and working against the passage of any war minerals appeals legislation. Secretary Payne at that time said he would inform Congress that he himself was not opposed to such legislation. Nevertheless, opposition to legislation granting appeals continued to emanate from the commission.

In the communication to Secretary Fall, the Mining Congress entered a vigorous denial of Secretary Payne's assertion that of the 776 claimants whose claims were denied by the War Minerals Commission 546 acquiesced in the rejection. "If acquiescence means a silent submission to the ruling of the Secretary of the Interior which the law declares must be final, then the claimants may be said to have acquiesced," the communication read. "Acquiescence, however, involves a voluntary, willing admission and is not applicable to the regrettable position in which claimants found themselves, without appeal."

In a letter sent to the Mining Congress just prior to March 4, Secretary Payne spoke of the dissatisfied war minerals claimants as "a few" and referred to their efforts for the right of appeal as a "clamor." In the final paragraphs of the letter to Secretary Fall, the Mining Congress touched upon this phase, as follows:

"For your predecessor's letter to speak disparagingly of the "clamor of the few dissatisfied claimants" is to treat with a lack of requisite dignity the right of every American citizen in the preservation of his constitutional rights. The clamor of one justly dissatisfied claimant should receive just as earnest, sincere consideration as the clamor of a multitude.

"It is the earnest and sincere hope of this organization that the true purpose of the War Minerals Relief Act as passed by Congress can be ultimately administered by your department and the rights of these citizens who are and have been dependent upon the good faith of the government in carrying out its recognized obligations may be sustained and the good faith of the government thereby vindicated, and for the achievement of this purpose our entire confidence is reposed in you."

The members of the House Committee on Mines and Mining are in favor of legislation giving war minerals claimants the right of appeal. All data bearing upon the question has been kept before them by the American Mining Congress.

TRI-STATE CHAPTER BEGINS NEW ZINC INVESTIGATIONS

H. H. THORNBERRY, research metallurgist of the School of Mines at Rolla, Mo., has been assigned to research in the Joplin district. He spoke at the May 13 meeting of the Tri-State Chapter of the American Mining Congress, and received numerous requests for co-operation in solving milling, extraction and flotation problems.

The services of an additional representative of the Missouri Bureau of Mines and of representatives of the Geological Survey and the United States Bureau of Mines have also been placed at the disposal of the Joplin operators.

Many members of the Tri-State Chapter attended the American Zinc Institute meeting in St. Louis during the second week in May. About two-thirds of all in attendance came from the Joplin district, and relief for zinc interests was the main topic for discussion. The institute adopted unanimously the following resolution introduced by H. T. Hornsby of Joplin:

"WHEREAS, the United States treasury department is to make a new coin, $2\frac{1}{2}$ cent piece with a portrait of Roosevelt upon it, and

"WHEREAS, zinc properly alloyed has been used advantageously in the other countries, notably in France, Britain and in Germany, therefore,

"BE IT RESOLVED, that the secretary of the American Zinc Institute be, and hereby is instructed to request the secretary of the United States treasury to make use of zinc in the coinage of this new piece, on the grounds of economy, efficiency and the encouragement it will extend to a key industry of this country."

On account of the condition of the zinc market, the Tri-State Chapter is meeting twice monthly.

SIDNEY NORMAN ASKS PROTECTION FOR SMALL PROMOTER

NO EFFORT HAS BEEN MADE to protect small promoters, who are indispensable side-partners of prospectors during the era of paternalism which has swept over the United States, is the opinion of Sidney Norman, editor of *Northwest Mining Truth*. Mr. Norman, at the Third International Mine Convention held in Portland, delivered a very interesting address on the subject of protection for the promoter.

Mr. Norman said "blue-sky" laws in thirty odd states of the Union had so circumscribed legitimate efforts that the greater number of the "unconquerable optimists who in past days brought the opportunities of the west to public attention" had given up the fight and migrated to other fields of effort. He spoke, in part, as follows:

"It is inconceivable that any western state anxious to develop its mineral resources should so circumscribe the efforts of honest men, in protection of fools who could not be protected outside the four walls of an insane asylum, as to make the business of promotion in a small way impossible.

"The spirit of venture, which was built in the west, must be preserved if we are to enjoy the prosperity of earlier days. Elimination of the hope of big reward, 'blue-sky,' if you will, has limited the spirit that prompts the small investor to put his luck to the touch. Big corporations have never engaged in initial development work of prospects and probably never will. That must always be left to the contributions of the many, collected by the initiative, optimism and energy of the small promoter, spurred on by the hope of reward."

The speaker believed this to be one of the big questions confronting the mining industry and asked that deep consideration be given to formulation of some national plan by which the small promoter could be restored to former activity. He suggested that supervision of mining and oil corporations seeking capital by public sale of stock be placed in charge of the U. S. Bureau of Mines under some plan by which the promoter, after establishing his bona fides with the bureau, could automatically gain the right to seek capital in any state of the Union.

PETROLEUM PROSPECTS IN SOUTH AND CENTRAL AMERICA

SHORTAGE of world petroleum supplies, apparent and prospective, together with recent discoveries in South and Central America, has stimulated American interest in the fields of the southern hemisphere. Judge J. W. Thompson, law examiner of the Bureau of Mines, during the month of May contributed materially to an accurate understanding of the situation there in an official treatise on "Petroleum Production in South America in Relation to Recent Petroleum Legislation."

While it is true that restrictive laws serve as obstacles in the path of American development in some countries, and that in others British companies have secured a lead on those of other nations, yet it is equally true that the opportunity before American capital is great and that in some instances this opportunity has already been seized.

Argentina now has four distinct petroleum zones, the most important of which is in the territory of Neuquen, where work which began last year has resulted in the development of four wells with an estimated production of one million barrels. The Argentine government is disposed to grant to private interests the right of participation in oil developments, and British and American interests are both active.

Bolivia's geologic structures are being studied by American investigators. Large acreages of land have been conceded without any guarantee of development. The executive has the right to contract for exploitation of petroleum. The concessionaires include American, British and local companies.

Brazil's estimated producing capacity in ten years is 600,000,000 barrels. The new mining code of January, 1921, contains no specific provisions as to petroleum, but it mentions "combustibles, fossils, gems and other substances of important industrial value." Residents or foreigners in Brazil or any corporation may operate under the law through a license. Petroleum wells on government land are the property of the government and those on private land belong to the land owner, but both federal and state governments can appropriate privately owned wells if public necessity justifies.

British Guiana's laws specify that none but British subjects can secure concessions for mineral oil rights.

Chile possessed no known petroleum deposits up to October, 1919. It was reported that an English engineer was negotiating in January, 1921, for the purchase of lands in Longuimay, where indications of petroleum were discovered. The state owns sub-surface substances, though the surface is privately owned. All persons may prospect and open lands, either publicly or privately owned, but under a license granted by the land owner, or on his refusal by a judge of proper jurisdiction.

Colombia has been known to possess petroleum fields for more than one hundred years, but development has been practically prevented by the government's desire to control the oil resources and prevent them from passing to foreigners. Oil rights are reserved as the property of the government, and in 1910 a law was passed forbidding concessions to foreigners. However, when the first well was brought in on the Magdalena River in 1918, the policy of giving concessions began, a large number having since been issued to various interests. Recently certain Colombian interests have endeavored to induce French capitalists and companies to undertake oil development, and it is reported that high functionaries of France have arranged to send a commission to Colombia to make a thorough investigation. In December, 1919, a law was passed that was intended to encourage local investors and to attract foreign capitalists for petroleum development. All public lands were opened for prospecting under government license, and on discovery a contract was given for development. Aliens and foreign corporations are required to comply with all laws relating to alienship and naturalization and abide by the provisions of the law with regard to government supervision, taxes, rates of leases and causes of forfeiture. The president of the republic, on recommendation of the board of finances and council of ministers, must approve the leases. Lesses must agree that at the expiration of the term or on forfeiture the nation will acquire free of charge all property of the concession. Leases may be forfeited if transferred to a foreign government or if the right of government supervision is ignored or evaded, and for other reasons. The government assumes the right to impose certain taxes and penalties on land owners who fail within a stated period to develop their lands when they are within known oil territory.

Ecuador's geologic structures are favorable for cheap production of oil. Three separate localities are to be tested under a concession granted an English syndicate. A British company is seeking to acquire rights to 60,000 acres on the Santa Elena peninsula. The total production of the country is 40,000 barrels. A tax of six percent is levied on the gross production of each exploration. Unless petroleum mines are adjudicated, the state owns them exclusively. The right of a holder of a patent ceases if exploration is not begun within two years. A change in the petroleum laws of the republic is regarded as indispensable for encouragement of the industry.

Peru has granted over 17,000 known claims, all of which have been located, and considerable presumably oil-bearing territory in addition has been granted. Peru has no specially adapted petroleum mining code. Concessions are granted and exploration and developments proceed under the general mining code of 1900. A new petroleum bill has been introduced and has passed the Senate and may become a law at the next session of the Peruvian Congress. A law of August 19, 1917, imposes certain taxes on crude petroleum and its refined products based on New York quotations. Petroleum products exploited in mountainous regions are exempted from taxation. An exportation tax of one shilling per metric ton is imposed, but neither crude petroleum nor its derivatives can be exported until the requirements of the home market have been supplied.

The Venezuelan government encourages foreign capital to acquire petroleum concessions and desires contracts with responsible companies which will proceed immediately with extensive development. Both British and American companies are active. Natives have been active in taking up concessions without the idea of operating but with a view of selling to foreign companies. The estimated production for 1919 was 425,000 barrels. The principal difficulty lies in lack of transportation and the only solution rests in the construction of pipe lines. There is only one refinery. Operations are governed by special law and contracts for all purposes must be procured from the federal executive. A tract cannot be explored to exceed 10,000 hectares, and not more than six permits can be issued to one individual. On discovery of petroleum, the tract is divided into plots of 200 hectares and the explorer is given a contract for the exploitation of the petroleum discovered. No restraint is placed upon the issuance of permits and contracts and they may be assigned to any person or company. However, one person or company may not obtain more than 40,000 hectares for oil operations.

Costa Rica's concessions to British interests include one-half of the republic's territory. The concession runs for fifty years from 1918 with a possible extension of fifty years. The terms are extremely favorable and the company has almost unlimited powers. Thirty thousand pounds must be spent in exploitation in three years and one hundred thousand pounds during the succeeding seven years. The company is required to pay a duty of 25 cents per one thousand kilograms of all crude petroluem sold.

Guatemala's unfavorable laws have prevented active operations within her boundaries, although some explorations have been made in the hope that a more favorable legislative code will be enacted. American and British interests have been exploring in Guatemala during the last year. By a decree of 1916, the nation reserves absolute title to all sources of petroleum and their exploitation would be under a non-transferable lease not to exceed ten years. There are no producing wells.

Salvador's richest fields so far discovered are new ones, and indications are that they are capable of great development. In November, 1920, it was reported that English investigators had made especially important discoveries of indications. The state owns all petroleum deposits, except such as surface owners had discovered and reduced to possession prior to 1918.

TROUBLES OF AMERICAN OIL CONCERNS IN COSTA RICA

DIFFICULTIES ENCOUNTERED by American oil companies operating in foreign countries are shown in a report made to Congress by Secretary of State Hughes on the Pinto-Greulich concession made in 1915 by the Costa Rican government to Dr. Leo J. Greulich of New York. The concession granted an exclusive right for four years to explore all oil deposits in Limon, Puntarenas and Guanacaste, and a fifty-year contract for operating purposes with a preferential right of renewal. The contract called for the organization of the Costa Rican Oil Corporation and forbade the transfer of rights to any foreign state, or government. The concessionaire was to pay 15¾ percent of the value of the substances taken from the soil, the value to be the average price obtained by the company during each year for the crude product at the mouth of the well. The company was to give the government of Costa Rica free crude petroleum for railroads and gas for lighting government and municipal buildings and schools.

Henry F. Sinclair undertook to acquire shares of stock held by Lincoln G. Valentine and his associates in the Costa Rican corporation and Sinclair interests organized the Sinclair Central American Oil Corporation, the concession remaining vested in the Costa Rican Oil Corporation.

Donald F. MacDonald formerly of the U. S. Geological Survey and the Panama Canal Commission, organized a staff of twenty technical men and laborers for exploration work which was begun in Costa Rica in March, 1917. The company sunk eight pits from which small amounts of petroleum were obtained and in July of that year, upon receipt of preliminary reports from the geologists, assembled material and supplies for drilling deep wells. For a year the War Trade Board of the United States prevented the exportation of this equipment. As soon as the export order was obtained the materials were shipped to Costa Rica, arriving in December, 1918. The first well was commenced near Uscari in March, 1919. A small amount of oil was found in this well at a depth of 618 feet. Drilling continued to 1,100 feet, when the casing collapsed.

A second well was started in June, 1920, and at a depth of 1,318 feet the casing collapsed, although a small amount of oil was found at 688 feet. A new site was selected at Cahinta in November, 1920, and the company has completed construction of a camp there. The company completed a survey of 4,000 square kilometers which it is entitled to retain, and has notified the Costa Rican government that it relinquishes all rights in the provinces of Puntarenas and Guanacaste and that the area it retains occupies the belt along the Atlantic coast extending from the Panaman to the Nicaraguan boundary.

The contract stipulated that the contractor must expend during the first two years, between November 12, 1916, and November 12, 1918, two hundred thousand colones in exploration and during the next three years expiring in November, 1921, 250,000 colones in exploration or exploitation. The company reports a total expenditure of 308,000 colones during the first two years, which outlay has been acknowledged by the Costa Rican government. Between the beginning of the second period and October, 1920, the company reports expenditure for exploration and exploitation aggregating 1,580,898 colones.

In October of last year the Costa Rican government notified the Costa Rican Oil Corporation that the control of the corporation by the Sinclair Central American Oil Corporation was in violation of the contract and that the company must produce and market Costa Rican Oil within three years. In August, 1920, the Costa Rican Congress recommended to the government that it begin action in the Costa Rican Courts for cancellation of the Pinto-Greulich contract.

Secretary Hughes says a controversial question has arisen between owners of the Pinto-Greulich concession and certain other American concerns regarding ownership of sub-oil products in lands in the concession, these subsoil products being claimed by those concerns under grants said to precede the concession.

In the case of the Amory Oil concession, the charge was made that an American company obtained an oil concession in Costa Rica for British interests. In May, 1916, a concession was granted by the Costa Rican government to Miguel D. Ferrer, attorney for John H. Amory & Son, New York. It gave for twelve years exclusive right to discover petroleum in Cartago, Alajuela, Heredia and San Jose provinces, and a contract to exploit for fifty years, for a royalty of twenty-five cents per metric ton on hydro-carbons exported or sold and the delivery of free oil for railways and natural gas for public buildings in Costa Rica. The concession also gave rights to export coal which might be found on the lands, stipulating that at the end of fifty years the deposits, resources and lands should revert to the republic with a preferential right for renewing the contract. The right was also given to transfer the concession to the Central Costa Rican Petroleum Company, to be organized in four years.

Secretary Hughes in his report says the interests now in control of the Amory concession would seem to be indicated by an address of D. E. Alves, president of the British Controlled Oil Fields, Ltd., at a meeting of the stockholders of the company at Montreal December 28, last, in which Mr. Alves said that the concessions granted by Costa Rica covered 6,000 square miles; that drilling outfits had reached Port Limon but that drilling had been prejudiced by action of the Costa Rican government, which had changed since the concession had been granted, the new government having annulled the concession. Mr. Alves said: "foreign oil interests have intrigued to this end," and that the action of the Costa Rican government had stopped operations for the time being. He further said the company was defending its position and receiving the "powerful support of British authorities." Mr. Alves was also quoted as saying that machinery has been created which places the whole of the oil supply which may be obtained from this vast chain of territories under British control. A permanent voting trust had been created, the result of which would be that "no matter who may acquire the controlling interest, however financially powerful they may be, they can never divert a single barrel of oil from national or imperial requirements."

The Hughes report states that in July of last year, the Costa Rican Congress declared null all acts of the former administration, including the Amory concession. The report states that the fact that the persons to whom the Amory concession was nominally granted were of American nationality, raised the question of the support which might be given to the undertaking by the American government. The company holding the Amory concession in communications to the State Department concealed participation of foreign interests in the contract, says Secretary Hughes. The State Department declared prior to negotiations of the Amory concession that it would not consider any claim of American citizens arising from this transaction with the Tinico, or former, Costa Rican administration, which made the Amory concession, as worthy of diplomatic support. The attitude of the State Department towards the concession was based upon its general policy toward a usurping, revolutionary régime in Costa Rica, which was never recognized by America and which passed out of existence in 1919.

The Costa Rican government and the British minister at San Jose on February 14, last, signed an agreement providing that certain questions relative to the Amory concession should be submitted to arbitration by the Spanish Minister at San Jose, but the agreement was rejected by the Costa Rican Congress March 7, 1921.

BRITISH GOVERNMENT WILL NOT BUY COAL DURING STRIKE CRISIS

COMMERCE DEPARTMENT advices from London indicate the British authorities have no intention of purchasing coal for government account to tide the country over the present crisis. Every possible encouragement, however, is extended importers of coal, including assurance of government protection for unloading cargoes. The French controller has agreed to remove all restrictions from northern France to British ports. So far no coal has been discharged under government protection, but on May 15 eight cargoes had been unloaded in different ports by voluntary labor. Domestic coal rations are now limited to cooking except in cases of serious illness. Charter to transport American coal to Great Britain at 35 shillings per ton; Gibraltar at 32 shillings 6 pence per ton, indicating marked increase freight in each case.

ZINC EXPORTS.—Shipments of zinc pigs and slabs made from domestic ores were made during March as follows: to Canada, 3,750 lbs; to Mexico, 136,833 lbs; British West Indies, 520 lbs; Brazil, 4,402 lbs; Chile, 10,000 lbs; Peru, 9,600 lbs; Philippine Islands, 9,001 lbs; total, 174,106 lbs. Sheets and strips made from domestic ores were exported as follows: to Italy, 560 lbs; Norway, 30 lbs; England, 29,598 lbs; Canada, 99,296 lbs; Costa Rica, 488 lbs; Honduras, 850 lbs; Nicaragua, 217 lbs; Panama, 4,638 lbs; Mexico, 10,731 lbs; Cuba, 2,438 lbs; Haiti, 1,233 lbs; China, 40 lbs; Australia, 6,304 lbs; Philippine Islands, 15,442 lbs; total, 171,865 lbs. Department of Commerce figures.

WORLD MINERAL SITUATION REVIEWED IN COMMERCE DEPARTMENT ADVICES

CABLE ADVICES to the Department of Commerce are to the effect that there have been diminished imports into Austria of coal, iron, steel and petroleum. Stocks of British, Dutch, and German steel and iron, and Rumanian gasoline and oil in Austria are greater than last year. Coal supplies are available in adequate quantities and the market is overstocked with iron goods.

In Belgium there has been a revival in the export of coal and metallurgical products owing to the British strike. Considerable stocks of copper ingots and zinc are on hand.

Czechoslovakia imported 351 million crowns of chemicals, 55 million crowns of metals, agricultural machinery, and automobiles; 48 million crowns of mineral oils and 65 million crowns of iron during the first quarter of 1921. The coal tax which in eight months of 1920 yielded 894 million crowns is to be reduced to aid the industry. Coal mine warehouses owning sidetracks will be compelled to subscribe to a two billion crown bond issue for extensions to telephone and railroad service, in proportion to the telephone and freight service used.

The French market is overstocked with coal and efforts are being made to export the surplus stocks.

Export prices for German iron and steel products in April were lower than in March. The iron and steel industry is depressed.

In Scandanavia there are excessive stocks of coal and chemicals. Stocks of iron and steel exceed the export demand and their production has been curtailed.

In Spain there has been a decrease in coal imports and a decrease in exports of iron pyrites ore, of which large quantities are on hand.

In England stocks of iron and steel are in excess of last year's stocks. High prices are predicted for copper, lead, spelter and tin. Prices of iron and steel were lower in April than in March.

In Australia stocks of wire are equal to a year's supply and sheet steel and sheet iron and tin plate stocks are also large.

In the Straits Settlements holders of tin are counting upon revival of the American tin market and smelters say that accumulation of tin prior to February 26, in the Dutch East Indies and Straits Settlements is a result of the government's purchases for holding, so it will not be put on the market until the market is stronger.

In Argentine the steel market is overstocked and the demand dull. Manufactures of steel and hardware estimated at a total value of over fifteen million dollars remain at the customs house. Belgian and German competition in steel is keen and Belgium and Germany are quoting prices 25 percent lower than American firms.

In Brazil, although there have been decreases in stocks of iron and steel during the last two months, stocks are greater than during the same period of last year. Large quantities of German and Belgian metal goods are being received.

In Mexico the export commodity market is overstocked with minerals. Fewer American salesmen are seen in Mexico than formerly, although American capital is entering the country in limited quantities. There is a possibility that valuable concessions may be granted for petroleum exploration.

Egypt has created a Bureau of Commerce and Industry, which has instituted a permanent exhibition illustrating Egyptian industries. Among the exhibits are brass, iron, copper, and silver.

ATTORNEY SEES VALUE OF MINING CONGRESS BULLETINS

"EFFICIENT and up-to-the-minute," is the description applied by H. L. Scaife, prominent lawyer of Washington, to the bulletin service of the American Mining Congress. When it is considered that Mr. Scaife as a commerce counsel is familiar with all the methods for keeping posted commonly resorted to in the national capital, and that he has first-hand information for appraising them, the value of his approval is seen to be of importance. Mr. Scaife's appraisement of the Mining Congress Information Service was contained in the following communication:

May 12, 1921.

Mr. J. F. Callbreath,
Munsey Building,
Washington, D. C.

My dear Mr. Callbreath:

I believe that it is generally recognized that the Information Service of the American Mining Congress is not only efficient and up-to-the-minute for persons interested in mining, but I have recommended it to a number of business concerns in no way connected with the mining industry, because of the information it gives that can be utilized in any business.

Your daily bulletin, giving changes in regulations of the various bureaus of the Government, sometimes affecting overnight the conduct of business and policies in the conduct of business, its résumé of important Supreme Court decisions which establish new precedents in business management, and its forecasts of what is going on in Congress and Government circles, is to me a remarkable and useful work.

The man who does not keep up these days will soon get hopelessly lost and it is a day when thousands of dollars might be lost or saved according to the accuracy of a man's knowledge as to what he is really expected or required to do in meeting the changes and reversals in Government decisions. When 22,594 bills and joint resolutions were introduced in a recent Congress and legislation in general is reaching out to infinity, your bulletins are very valuable and they are so pithy and concise that a business man catches on with a minimum expenditure of time and money.

What really prompted this letter is the fact that a short time ago I wanted some information in no way connected with mining matters and I needed it quick. I supposed that a special investigation would have to be made until I thought of looking in your Information Service files, where I found that you had already analyzed the entire subject and had expressed just what I wanted in about three lines. Another thing about your service is that if you do not have some special information desired, you know where and how to get it promptly.

When people do not get good service, they are ready to make a rough-house, and, as it is a poor wheel which will not turn both ways and, since I have made use of your information service from time to time, I felt a word of appreciation would not be undeserved.

With kindest regards, I am,

Very truly yours,
H. L. SCAIFE.

NATIONAL FOREIGN TRADE CONVENTION

"GREATER PROSPERITY through greater foreign trade," was the keynote of the eighth annual National Foreign Trade Convention which was held in Cleveland, May 4–7, and attended by approximately two thousand delegates, representing important elements in American industry.

Throughout the convention three major ideas were emphasized by the important speakers at the general meetings and developed more fully in the group sessions. These ideas may be summarized thus:

1. The export trade of the United States furnishes the margin of distribution which enables American industry to carry on at full capacity with resulting prosperity to industry, labor and the public. This export margin now amounts to approximately 25 percent of our total productive capacity.

2. Cut off this margin or impair the steady flow of American commodities over-seas, and inevitably there will be a slowing up of production at home resulting in unemployment and partial stagnation. As James A. Farrell, president of the United States Steel Corporation, pointed out in his opening address, the most striking illustration of this effect was shown in 1914. The industrial situation at home was splendid. There was nothing wrong in the domestic market but the stoppage of the export movement created stagnation during the months of August and September. The present situation also furnishes obvious evidence of the effect of the slowing up of export movement upon American industry.

3. In order to prevent continued depression in such basic industries as copper, cotton, staple agricultural foodstuffs, as well as in manufacturing industries, it is essential that American business should create a sound mechanism whereby our foreign customers can be furnished with long-time credits, making it possible for them to resume productive processes. Only through the creation of such a mechanism will American industry be able to compete effectively abroad, and through the utilization of the necessary margin of distribution in the foreign markets be able to maintain full production and continued expansion. Such a mechanism is provided in the Edge Law banking institution—the Foreign Trade Financing Corporation—which should be supported as a national institution essential for the further industrial progress of the United States.

The above summary is a condensed statement of the gist of the remarks made by F. I. Kent, vice-president Bankers Trust Company of New York; James A. Farrell, president, U. S. Steel Corporation; E. N. Hurley, former head of the U. S. Shipping Board; W. C. Redfield, ex-Secretary of Commerce, and E. M. Herr, president of the Westinghouse Electric Company.

In addition to the emphasis placed on the necessity of developing a proper mechanism for financing our export trade, thereby making possible its continuance, considerable attention was given to the formulation of a proper American maritime policy. The emphasis in this regard was placed on private rather than public development, and the necessity of furnishing such aid as might be necessary to enable American shipping companies to meet foreign competition, and the importance of maintaining the American merchant marine as an adjunct in the building up of our foreign trade.

The serious effect of the present system of double taxation on the incomes of American companies doing business over-seas was pointed out and recommendations requesting the elimination of such taxation were embodied in the final platform of the convention.

Another point which was also placed in the recommendations of the convention but to which little general discussion was given was the importance of framing all American tariff legislation in such a way as to provide the Executive with a means of discriminating against those nations which discriminate against American commodities and of favoring those which favor American commodities. It was felt that such a bargaining feature in our tariff legislation would be beneficial.

J. G. BRADLEY HEADS NATIONAL COAL ASSOCIATION

J. G. BRADLEY of Dundon, W. Va., was elected president of the National Coal Association at the annual convention, held in New York May 19-21. Mr. Bradley is president of the Elk River Coal & Lumber Company. Other officers were elected as follows:

Vice-presidents: Alfred M. Ogle, president Vandalia Coal Company, Terre Haute, Ind.; Erskine Ramsay, first vice-president Pratt Consolidated Coal Company, Birmingham, Ala.; Ira Clemens, president Clemens Coal Company, Pittsburgh, Kans.; J. D. A. Morrow, Washington, D. C.

Secretary—W. B. Reed, Washington, D. C.

Treasurer—J. J. Tierney, vice-president and general sales manager Crozer-Pocahontas Company, Philadelphia, Pa.

Executive Committee: J. G. Bradley, chairman; C. E. Bockus, president Clinchfield Coal Corporation, New York, N. Y.; T. W. Guthrie, president Hillman Coal & Coke Company, Pittsburgh, Pa.; G. W. Reed, vice-president Peabody Coal Company, Chicago, Ill.; A. J. Maloney, sales manager Chicago, Wilmington & Franklin Coal Company, Chicago, Ill.; H. N. Taylor, vice-president Central Coal & Coke Company, Kansas City, Mo.; J. P. Walsh, vice-president Pittsburgh Coal Company, Pittsburgh, Pa.; T. H. Watkins, president Pennsylvania Coal & Coke Company, New York, N. Y.; T. T. Brewster, vice-president Mt. Olive & Staunton Coal Company, St. Louis, Mo.; D. B. Wentz, president Stonega Coke & Coal Company, Philadelphia, Pa.

Directors at large: J. G. Bradley; F. C. Honnold, Chicago, Ill.; E. C. Mahan, Knoxville, Tenn.; P. J. Quealy, Kemmerer, Wyoming.

The following directors were re-elected: J. S. Brophy, Frostburg, Md.; J. C. Brydon, Somerset, Pa.; A. R. Hamilton, Pittsburgh, Pa.; C. H. Jenkins, Fairmont, W. Va.; F. W. Lukins, Kansas City, Mo.; Andrew Maloney, Chicago, Ill.; Quin Morton, Charleston, W. Va.; R. M. Randall, Saginaw, Mich.; G. W. Reed, Chicago, S. H. Robbins, Cleveland; W. J. Sampson, Youngstown, Ohio.

Peter Kooi was elected for one year to succeed W. J. Carney of Chicago. George Heaps, Jr., of Des Moines was elected for one year to succeed E. M. Gray of Des Moines. L. C. Crewe of Knoxville, Tenn., was elected director at large to succeed E. C. Mahan.

The following directors hold over for one year: George H. Barker, Ohio; C. E. Bockus, Virginia; W. D. Barnum, Washington; T. T. Brewster, Illinois; Ira Clemens, Kansas; T. W. Guthrie and T. H. Watkins, Pennsylvania; W. H. Huff, Colorado and New Mexico; A. M. Ogle, Indiana; Erskine Ramsay, Alabama; C. W. Taylor, West Kentucky; R. T. Price, Oklahoma and Texas; J. J. Tierney, West Virginia.

One of the most important steps taken by the convention was the appointment of a committee to represent the associaton at the contemplated conference on the Frelinghuysen coal bill, at Washington, and in other legislative matters. The committee was given full power to act and was not given any instructions. It consists of W. K. Field, president Pittsburgh Coal Company, Pittsburgh, Pa.; E. E. White, president E. E. White Coal Company, Beckley, West Va.; Ralph Crews, of Shearman & Sterling, New York, N. Y. These three were selected by a committee of operators representing every bituminous district.

Upon being presented to the convention, President-elect Bradley said, in part:

"I feel that none of us know what the future contains, but we do know this: that coal is, next to food, the great and important natural product of this country. It is our duty to supply this country with the coal to keep the wheels turning, to warm the mother and father and the children. We must approach this task in the spirit of service, and if we do we will put the coal industry of the United States in the foremost ranks and our citizens as a whole will be only too willing to render us the praise that is our due."

The association adopted strong resolutions endorsing the administration of the retiring president, Col. D. B. Wentz. The resolution provided, among other things, "That this association do hereby express their high and sincere appreciation of the unselfish devotion to the interests of this association shown by our retiring president, Colonel Daniel B. Wentz, in the discharge of the duties of his office, and the able manner in which he has guided the affairs of the association; and that we do hereby commend unqualifiedly his work and efforts on behalf of our association."

WHOLESALE COAL SECRETARY PROUD OF HIS ASSOCIATES

"MOST OF THE COAL MEN are red blooded citizens," said Charles S. Allen, secretary of the Wholesale Coal Trade Association of New York, after he and his attorney, Gibbs L. Baker of Washington, were freed on May 4 of the charge of using the mails to defraud.

Mr. Allen and Mr. Baker were specifically charged with securing fees on the promise of being able to "fix" the Department of Justice and they were indicted in New York upon the instance of Armin W. Riley, at that time head of the government's "flying squadron." Mr. Baker was also accused of saying he had a strong influence with William McMurtrie Speer, a special U. S. attorney. These charges were also made before the Calder Committee. Both men denied the charges and asserted they were instigated as a result of their efforts to prevent profiteering in bituminous coal.

F. G. Caffey, U. S. attorney, requested Judge Hand to dismiss the indictment, after he had resubmitted the testimony to the April grand jury, at the request of the Attorney General, and the jurymen had decided there was no reason for indictment. Messrs. Allen and Gibbs had previously declined to secure dismissal of the indictment by taking advantage of technicalities.

After the case had ended Mr. Allen announced his intention of bringing suit against Riley for $100,000 damages for malicious prosecution.

COAL TO ARGENTINA.—The Guaranty Trust Company, of New York, announces that as a result of the strike of British Coal Miners, the United States is now supplying more than nine-tenths of the coal imported into the Argentine Republic, according to information just received from South America by the Guaranty Trust Company of New York. One-tenth of the imported coal continues to be supplied by Great Britain, our chief competitor in the Argentine coal market, on account of her control of practically all of the railroads, which furnish 75 percent of the total demand for coal in that country. Although the present diversion to the United States of the bulk of this coal trade is due to temporary conditions, nevertheless American coal exporters have gained an important foothold on the east coast of the Argentine and a return to normal conditions should see a decided strengthening of their position. Argentine coal importers are at present faced by a serious situation as a result of the policy of the labor unions.

PREVENTION OF COAL LOSSES DISCUSSED BY MINES BUREAU ENGINEER

THREE METHODS for overcoming losses of coal in mining are discussed by George S. Rice, chief mining engineer of the Bureau of Mines, in a recent paper entitled "Some Factors Affecting Losses of Coal in Mining." Stating that many mine owners concede that their total recovery is 60 or 75 percent, Mr. Rice treats proposed remedies as follows:

"If the government owned all the coal, as was the case in the western states before the coal lands were sold, and then leased the coal under conditions that would insure the maximum recovery, that would provide a direct remedy and all operators would be under the same competitive conditions. This plan has been under consideration in Great Britain for the past couple of years and in this country is being put into effect with regard to coal on government lands so far as can be done with reference to competition with privately owned coal lands. Through the leasing enactment of February 25, 1920, the coal in the public lands of the West will hereafter be leased and not sold. Operating regulations which look to better recovery of the coal have been devised by the Bureau of Mines in co-operation with other interested agencies, and these have been approved by the Secretary of the Interior.

"Another remedy that has been suggested is to forbid by federal statute that any coal should be left in the ground that could be recovered by systematic mining. This does not seem practical from a constitutional standpoint, and if such a law were constitutional and were enacted who would pay the bill? Many mining operations would be driven into bankruptcy, or else the government would either have to pay the additional costs, or by remission of taxes or other means equalize the operations competitively. This plan may be dismissed as being too complicated for consideration as a practical solution.

"One of the helps will be to overcome seasonal mining, which has been so much discussed, but this can only be made effective when the number of new mining operations is curtailed. It has always been the case in the bituminous industry of this country that the development of new mines has gone on far more rapidly than the increased use of coal.

"Turning to other means, another solution is to keep up a campaign of education and through pressure of public opinion and advice of the more progressive operators bring all operators into line who can improve their methods. Instruction in coal mining should be encouraged in the mining schools of the country. At present most of the mining schools are devoting themselves largely to turning out metal mining engineers, although the need in that direction is not nearly so great as for development of high class coal mining engineers."

Concluding his report, Mr. Rice states that while coal mining methods are not what they should be in the matter of preventing loss of national resources, yet this condition had not arisen from mere neglect, but is in general the result of too easily accessible resources with consequent over-competition in normal times, with intermittency of regular work and an absence of governmental control over the bulk of the nation's coal resources which is privately owned.

ORIGIN OF EARLY COAL BUYING.—There has been much discussion as to the origin of buying of next winter's coal supply during the spring. The Anthracite Bureau of Information holds that it was advised as long ago as 1831, when Stephen Girard in his will left a fund to provide fuel for Philadelphia's poor. He instructed his executors to buy between the months of March and August, when prices were lowest, for distribution during the following January. His good judgment then is eminently sound today, for the same and additional reasons.

FULL COAL BIN IS GOOD INSURANCE POLICY

RETURNS from the government coal questionnaire as of April 1 emphasize anew the wisdom of laying in an early and plentiful supply of coal for next season's use, in the opinion of Director George Otis Smith of the Geological Survey. Mr. Smith in an interview with a MINING CONGRESS JOURNAL representative characterized a full coal bin as a "good insurance policy."

"This inventory," Mr. Smith said, "may be summed up in the statement that the production of coal during the first quarter of 1921 was in round numbers one hundred million tons; that consumption and exports amounted to one hundred and eight million tons; and that the deficit—eight million tons, the difference between production and consumption—was made up by drafts upon the stocks of consumers. Such a draft on consumers' reserves may be likened to the physical exhaustion of an undernourished people in time of war. They may not perhaps suffer wholesale death by starvation, but their resistance to disease and hardship is impaired.

"He would be a rash man who should attempt to tell an individual consumer of coal at a time of depression like the present exactly how much coal he ought to buy, for, after all, the answer to that question depends not on how much the consumer may have used in the past but rather on how much he is going to need in order to make the goods to fill the orders that he expects to have. Every well-wisher of the coal consumer, however, every one who is anxious that for the best interests of all concerned the run-away market of 1920 may be avoided, will join in commending to the industrial plant the example of the public utilities and suggesting that in so far as requirements can clearly be foreseen now is the time to buy.

"The consumer must also keep in mind that the figures of stocks given out by the Geological Survey represent the condition as of April 1, and that on the whole, even with the gratifying turn upward of the production curve in the middle of April, consumption has probably continued to exceed current production.

"The consumer should realize the position of strength that he has won by building up this 40,000,000-ton reserve as of January 1. He should realize that the surest way to create a seller's market, an atmosphere in which the buyer must take coal on the terms at which the seller offers it, is to let his reserve fall so low that he must buy on a hand-to-mouth basis without freedom to choose the terms he will accept. Again, it is a situation where the enlightened interest of both parties lies in a tranquil, steady market."

In additional remarks advocating current purchases against future requirements, Mr. Smith said: "Insurance—that's what it is. If you have enough coal to last a few months, you just sit in your chair and let people try to sell coal to you. You are not going to run around the country and try to pick up coal. People can well afford to have that insurance."

PANAMA RAILROAD LETS COAL CONTRACT

THE MINE PRICE of $3.36 per gross ton will be paid for coal during the year ending April 30, 1922, by the Panama Railroad Company. Contracts for 220,000 tons and 400,000, respectively, have been let to the C. G. Blake Company and the Pocahontas Fuel Company.

APRIL ANTHRACITE SHIPMENTS.—The Anthracite Bureau of Information reports shipments during April totaling 5,967,465 tons, an increase of 229,694 tons over March and of 1,153,254 tons over April of 1920.

MORE WORK AND MORE TAXES FOR ANTHRACITE MINERS

PENNSYLVANIA'S NEW LAW taxing anthracite mining goes into effect on the first day of next month. It creates a levy of one and one-half percent upon all sizes and is applicable to anthracite alone, although the 1915 law was declared unconstitutional because it exempted bituminous. The tax will amount to twelve cents a ton upon coal selling for $8 at the mines, to about nine cents per ton on pea coal and from two and one-half to five cents on buckwheat.

The law prescribes that superintendents or other persons in charge of mines and washeries shall ascertain the number of tons mined daily and assess the value and make a report to the auditor general of the state by the first of February each year of his tabulated figures for twelve months. If the auditor general and the state treasurer are dissatisfied with this report, they may make such assessment as they think proper, and for the purpose of making such assessment they may require the production of the private books, papers and reports of the mine affected.

COAL LEADS AS POWER PRODUCER

PRODUCTION of power during the last three months of 1920 and the first two of the current year is reported by the Geological Survey as follows:

By coal—October, 2,408,678 kilowatt hours; November, 2,317,042; December, 2,326,792; January, 2,194,253; February, 1,977,197.

By water—October, 3,751,320; November, 3,705,507; December, 3,761,100; January, 3,558,394; February, 3,192,936.

Coal consumed, by short tons, was as follows: October, 3,169,081; November, 3,167,210; December, 3,208,373; January, 2,981,134; February, 2,642,855.

Fuel oil was consumed as follows: October, 1,169,495; November, 960,958; December, 949,946; January, 896,744; February, 771,804.

Gas, in thousands of cubic feet, was consumed as follows: October, 2,404,675; November, 1,909,313; December, 1,873,130; January 1,707,413; February, 1,469,418.

The total production of power during this period, in thousands of kilowatt hours, was as follows: October, 1,342,642; November, 1,388,465; December, 1,434,308; January, 1,364,141; February, 1,215,739.

AUSTRALIAN GOLD OUTPUT DECLINES

COMMERCE DEPARTMENT reports show the gold production of Australia to be steadily on the decline, the drop being consistent from 1909, when 2,968 fine ounces were produced, to 1920, when the figure was 943,692, the lowest in history. General depletion of mines in the principal gold areas is accredited with the major responsibility for the decrease, although the excessive wage demands made by labor are also largely responsible. Should the price of gold in London fall to the mint value it is said it will be impossible for Australian mines to produce gold at anything but a loss.

It is understood that gold amounting to $1,215,000 was shipped from Australia to San Francisco recently. In this connection it is noted by representatives of the Commerce Department that the export of gold from Australia is continuing. Last year the export of current gold amounted to $21,870,000. This did not affect the reserves. Only one bank in the country is allowed to export gold out of the commonwealth.

NO ANTHRACITE SHORTAGE EXPECTED

THERE WILL BE no anthracite shortage this year unless a winter of unusual severity or some other unforeseen circumstance brings it about, according to a forecast of the situation made by the Anthracite Bureau of Information, Philadelphia. This prediction is contingent, however, upon normal purchasing by the public during the next few months. Shipment figures indicate a decline in purchases since February, and of course if this continues it will mean a loss of tonnage which it may be impossible to recoup.

Anthracite production is generally fairly steady from year to year. Even in 1920, despite the buyers' panic, production was practically normal. Likewise, despite the panic, production per consumer was about the same in 1920 as it was four and five years previously.

"There need be no shortage this year," the Bureau announces, "nor in any year, if consumers will do their share and not postpone purchasing until the approach of winter weather."

"Mines and miners are ready and willing to produce the normal output. It should be remembered that the anthracite region is virtually immune from car shortages, except when severe storms may prevent transportation. Under normal conditions there are always enough cars available for the anthracite mines, and this has been the case for many years. If coal is ordered, shipment is sure to be prompt, provided orders are not bunched into a few months of the year.

"Facilities for steady buying are therefore at their best in the anthracite industry, since good transportation is virtually assured, and a steady flow of coal from the mines to the consumers during the spring and summer months is possible. The experience of the years preceding the war shows this to be a sure preventive of scares about lack of coal when winter approaches.

"Coal must move about as fast as it is mined. It is impracticable for the majority of the mines to store any coal, and demurrage charges prevent holding unsold coal in railroad cars. Storage charges and demurrage in any event mean added cost to the consumer. There is no demurrage on next winter's coal when it is in the cellar.

"Production is at its best in the spring and early summer. Weather conditions bear heavily on anthracite mines. For instance, owing to the use of water in the preparation of coal, and to the excessive amount of water in many mines, production is often handicapped in the autumn and winter. It might be mentioned that the water hoisted from the anthracite mines every year weighs about 30 percent more than all the coal—anthracite and bituminous—produced by the entire country in a year."

ANTHRACITE CONTRACT AWARDED.—The Philadelphia and Reading Coal and Iron Company has been awarded a contract by the Bureau of Mines to furnish coal to the Government Fuel Yards, Washington, at the following prices, f.o.b. mine: 7,800 tons white ash furnace, and 8,800 tons white ash egg, $7.75 each; 8,200 tons white ash stone and 1,700 tons white ash chestnut, $8.05 each; 2,600 tons white ash pea, $6.40; 480 tons red ash stove, $8.55.

SIBERIA EMBARGOES METALS.—The Far Eastern Republic, Siberia, has temporarily prohibited the export of gold ore, gold dust, bullion, coin, wrought and tinsel, silver bullion and coin, wrought silver, platinum, all other metals and their alloys, and articles manufactured therefrom, chemicals, mineral paints, manganese, molybdenite, and other ores of rare metals except silver lead ore.

OIL PRODUCTION AND CONSUMPTION FIRST QUARTER 1921

STOCKS of gasoline, kerosene, gas and fuel oil and lubricating oil were greater on March 31, the end of the first quarter of 1921, than on January 1. Production of gasoline and gas and fuel oil was greater than during the corresponding quarter of last year, while that of kerosene and lubricating oils was less.

The comparative analysis for the quarter, prepared by the Bureau of Mines, follows:

	GASOLINE		
INCOME	1921	1920	1919
Stocks, January 1	462,381,837	446,793,431	297,326,983
Production	1,268,416,081	1,026,445,532	898,535,505
Imports	9,540,679	8,575,464	6,048,918
Total	1,740,338,597	1,481,814,427	1,201,911,406
OUTGO			
Exports	151,953,454	109,610,676	96,639,064
Shipments to insular possessions	9,230,954	3,190,434	3,048,527
Domestic Consumption	866,110,709	742,620,271	556,161,386
Stocks, March 31	713,043,480	626,393,046	546,062,429
Total	1,740,338,597	1,481,814,427	1,201,911,406

	KEROSENE		
INCOME	1921	1920	1919
Stocks, January 1	393,070,923	339,319,690	380,117,829
Production	537,704,423	581,589,901	492,973,977
Imports	....	....	....
Total	930,775,346	920,909,591	873,091,806
OUTGO			
Exports	209,222,292	233,782,442	184,740,900
Shipments to insular possessions	1,381,513	3,899,876	4,548,619
Domestic Consumption	273,804,353	348,610,156	389,124,664
Stocks, March 31	446,367,188	334,617,117	294,677,623
Total	930,775,346	920,909,591	873,091,806

	GAS AND FUEL		
INCOME	1921	1920	1919
Stocks, January 1	837,404,414	714,124,455	659,001,357
Production	2,327,561,136	1,894,185,976	1,718,257,965
Total	3,164,965,550	2,608,310,431	2,377,259,322
OUTGO			
Exports	*522,036,638	*389,020,315	*232,970,028
Shipments to insular possessions	26,809,808	25,801,407	26,250,840
Domestic Consumption	1,610,801,165	1,613,305,851	1,368,970,648
Stocks, March 31	1,005,317,939	580,182,858	749,067,806
Total	3,164,965,550	2,608,310,431	2,377,259,322

*Includes fuel or bunker oil for vessels engaged in foreign trade: 1919, 2,017,955 barrels; 1920, 4,999,676 barrels; 1921, 6,441,231 barrels.

	LUBRICATING		
INCOME	1921	1920	1919
Stocks, January 1	160,522,477	137,318,934	138,853,574
Production	231,344,164	231,940,681	197,871,680
Total	391,866,641	369,259,615	336,725,254
OUTGO			
Exports	81,756,261	100,459,227	72,081,945
Shipments to insular possessions	1,698,006	1,567,046	556,588
Domestic Consumption	84,998,281	136,602,745	98,591,467
Stocks, March 31	223,414,093	130,630,597	165,495,254
Total	391,866,641	369,259,615	336,725,254

NEARLY 1,000 APPLICATIONS FOR OIL PROSPECTING PERMITS

DURING the month of April the Geological Survey reported upon the structural relations of 905 applications for prospecting permits for oil under the leasing act, bringing the total number of such reports made since July 1, 1920, up to 5,500. Since the passage of the leasing act reports have been prepared upon 128 applications for coal prospecting permits, and 103 were awaiting action at the end of April. Thirty-two applications for coal leases have been reported upon.

Nearly 900,000 acres were classified during April under the stock raising homestead law and designated for entry, as follows: California, 311,490 acres; Michigan, 320; Montana, 273,710; Oklahoma, 27,390; Wyoming, 240,190. The total area of lands classified to date is now more than 100,000,000 acres.

More than 1,000,000 acres were included during the month in formal orders designating land for entry as enlarged homesteads. These areas were as follows: Colorado, 897,130 acres; Idaho, 32,838; Montana, 110,638.

THREE-SHIFT SYSTEM IN THE IRON AND STEEL INDUSTRY

THE INTERNATIONAL Labor Office is sending a questionnaire on "experience with the three-shift system in the iron and steel industry" to countries which are members of the League of Nations. Open hearth furnaces, Bessemer converters and rolling mills are included in the inquiry, and each will receive a copy of the questionnaire. The Taylor Society, New York, is circulating the questionnaires in this country.

The object of the inquiry is to determine the extent to which the three-shift system has displaced the two-shift plan and the effects of the change on output, costs and the conditions of the working men.

CHANGES MADE IN OIL AND GAS LEASING REGULATIONS

TO ENCOURAGE PROSPECTING is the primary purpose of the leasing act of February 25, 1920, in the opinion of Secretary Fall. Since this purpose is most important, although the plain intent of the act is also to prevent monopoly, Secretary Fall has issued the following regulation:

THE COMMISSIONER OF THE GENERAL LAND OFFICE.

DEAR MR. COMMISSIONER:

Section 19 of the act of February 25, 1920 (41 Stat., 437), gives to certain persons who had located or acquired placer mining claims and who are able to meet other requirements imposed in the law, a preference right to prospecting permits upon such locations "upon the same terms and conditions, and limitations as to acreage, as other permits provided for in this act."

The limitation as to acreage which may be included in a single permit is found in section 13—2,560 acres. There is no limitation in section 19 as to the number of permits which may be obtained by a qualified person or persons who held the placer mining claims and are able to meet the conditions of the act.

As an administrative matter and in harmony with the evident intent of the act to avoid monopoly, a regulation was embodied in the oil and gas regulations of October 29, 1920, page 37, to the effect that qualified assignees since October 1, 1919, may secure preference-right permits, "but no such transferee will be permitted to hold permits exceeding 2,560 acres for such lands in the same geological structure, nor more than three times that area in the same State."

While the intent of the act is to prevent monopoly, its primary purpose was to encourage prospecting for and development of the oil and gas resources of the United States. In localities remote from transportation, refineries, pipe lines, and sources of supply, it may be difficult to secure the exploration of a wild-cat territory if the person or corporation conducting the exploration and development is limited to a maximum of 2,560 acres. Moreover, as stated above, section 19 is a remedial section, designed to take care of equitable claims of those who had initiated claims under the placer mining laws prior to withdrawals or prior to the repeal of the general mining laws as applicable to oil and gas deposits, and consequently no limitation was made in the statute as to the number of such locations which might be surrendered and made the basis of prospecting permits. The limitation above quoted is one of regulation and expediency and not of statute. Therefore, having in mind the purpose of the act and the scope of section 19, it is held that for development purposes, assignments of prospecting permits secured under section 19 of the act, to a qualified individual, corporation or association outside producing oil and gas fields and in localities without transportation facilities, refineries, pipe lines, or nearby sources of supply, for not exceeding five such permits in a State and near enough to each other for common development, whether contiguous or noncontiguous, may be presented for the consideration of the Secretary of the Interior, and his approval if he shall find same to be in the public interest.

To the extent of its conflict with the foregoing, said regulation under section 19 of the act of February 25, 1920, is modified.

Respectfully,

ALBERT B. FALL,
Secretary.

Persons who filed applications before February 25, 1920, cannot be deprived of their rights because of their own delay even when the Interior Department later designates the lands as within known producing structures. Secretary Fall has issued the following upon this subject:

THE COMMISSIONER OF THE GENERAL LAND OFFICE

DEAR MR. COMMISSIONER:

Based upon rulings of the Secretary of the Interior, the regulations concerning oil and gas permits and leases approved October 29, 1920, state on page 36, "where after application under section 13 for a permit and before permit is granted the land is designated as within the structure of a producing oil or gas field, permit cannot be allowed."

This regulation and the rulings on which it is based were not issued under a mandatory provision of the statute, section 13 of the act of February 25, 1920, authorizing the Secretary of the Interior to grant to any qualified applicant a prospecting permit upon lands "wherein such deposits belong to the United states and are not within any known geological structure of a producing oil or gas field."

Rulings of this Department in cases involving a like situation, arising under other land laws, are to the contrary. In the case of Charles C. Conrad (39 L. D., 432), where a homestead application was filed, and where the entryman had performed all acts necessary to complete his application, but by reason of delay in action thereupon by the local office a first form withdrawal under the reclamation act intervened, the Department held that his rights could not be prejudiced by the inability of the local office to allow the application until after the withdrawal, but that they related back to the time when he filed in the local land office his application, accompanied by the required showing, including the fees, the land being then subject to his application.

This and similar rulings of the Department are approved in principle by the recent decisions of the Supreme Court of the United States in cases of Payne *v.* Central Pacific Railway Company (February 28, 1921); Payne *v.* New Mexico (March 7, 1921), and Wyoming *v.* United States (March 28, 1921).

Applying the principle so announced, it is clear that not only equitably but legally qualified persons who filed proper applications for oil or gas prospecting permits under the act of February 25, 1920, cannot and should not be deprived of their rights if, because of delay in action upon the applications so filed, there intervenes a designation by this Department of the lands as being within the geological structure of a producing oil or gas field occasioned by a discovery of oil or gas subsequent to the filing of the application in the local land office. Accordingly, said regulation is hereby revoked, and in future applications will be adjudicated in accordance with the views herein expressed.

The statute, however, specifically forbids the allowance and approval of a prospecting permit upon lands within a "known geological structure of a producing oil or gas field" (section 13), and in section 17 provision is made for the disposition of unappropriated land in such structure by competitive bidding. Therefore, nothing in this opinion shall be construed as modifying or affecting previous decisions of this Department to the effect that prospecting permits cannot be allowed within the geological structure of a producing oil or gas field, so known and existing at and prior to the filing of the application for the prospecting permit.

Respectfully,

ALBERT B. FALL,
Secretary.

DOHENY DENIES SALT WATER MENACES MEXICAN OIL SUPPLY

REPORTS of the impending exhaustion of Mexican oil wells within three years on account of salt water were vigorously denied in Washington by E. L. Doheny, second vice-president of the American Mining Congress and head of the Mexican Petroleum Company. Mr. Doheny's companies last year led all others in the amount of Mexican exportations.

During the last ten years Mexico has produced approximately 550,000,000 barrels of oil, but production last year alone amounted to 185,000,000 barrels and that of the first two months this year was at the rate of about 220,000,000 barrels yearly. Naturally, some of the pools have by this time become exhausted, but Mr. Doheny showed that this circumstance is not indicative of the exhaustion of the resources of the country.

"That an oil pool containing one hundred or more million barrels should cease to produce when the oil is all extracted," Mr. Doheny said, "is no more indicative of an alarming menace or condition than is the death of a nonogenarian or even an octogenarian indicative of a lack of sanitary or health conditions in the vicinity where he lived."

Far from being hopeless, Mr. Doheny believes the Mexican fields show more indication of future large supply than any other in the world, with the possible exception of California. The Tampico-Tuxpam region alone, he believes, if its fields already proven yield as much per given area as that which has been taken from practically exhausted areas, will yield four billion barrels. And these regions form only a limited part of Mexico's oil area.

SECRETARY FALL ASKS FUNDS FOR OIL SHALE PROGRAM

THREE YEARS TIME and the sum of $240,000 will be required for the Bureau of Mines to provide the information necessary for the sound establishment of the oil shale industry. Opinions of Secretary of the Interior Fall and Dr. E. A. Holbrook, acting director of the Bureau of Mines, to this effect were communicated Chairman Marion E. Rhodes of the House Committee on Mines and Mining in support of House Resolution 2,348, which makes an appropriation of $140,000 for the first year.

Excess of domestic oil production over consumption during the last few months is declared by Secretary Fall to be temporary, and a continual decline in American output after a few years is forecast. Secretary Fall holds that distillation of oil from shale is the most likely recourse, and that the potential supply of oil from this source is sixty billion barrels, which "far exceeds in quantity all proposed oil substitutes from vegetable and other non-mineral sources.

"The oil shale industry will eventually be developed into one of the large industries in the United States," Secretary Fall informed Congressman Rhodes. "This, however, will be a matter of many years, first, on account of the great amount of technical knowledge and practical experience which must be obtained and, secondly, on account of the large amount of capital which will be necessary for development on a commercial scale and which will be available only as the price obtained for the products justifies the expenditures. Unless fundamental investigations are started, the development of the oil shale industry will be delayed and as the need for the oil becomes pressing large installations will be made hastily. It is a safe prediction that if these are erected without sufficient fundamental knowledge, much avoidable waste will result. If the bureau can within three years place at the disposal of the many companies and the public interested in oil shales the basic facts on which the commercial industry can be built the investigation will justify itself many times over."

For two years the Bureau of Mines has spent annually $8,000 on oil shale work, diverting the money from the petroleum and natural gas allottment. Colorado and Utah have spent during the same period $10,000 each in work conducted in co-operation with the Bureau of Mines. Results already attained will save American business large sums of money, in the opinion of Secretary Fall. One conclusion already reached is that the prevalent opinion that gasoline and naphtha can be obtained direct from the shale through fractional eduction is erroneous, as shale oil contains amost the same amount of gasoline whether it is produced early or late in the retorting process.

In recommending the appropriation of $140,000 for the first year and $50,000 for each of the two years following, Secretary Fall pointed out that there are four million acres of private and public land subject to leasing for oil shale and expressed the belief that when the industry is developed the government can expect a return from royalties which will greatly exceed the amount of appropriations asked for investigative work.

Dr. Holbrook stated to Secretary Fall that four questions were all important and needed to be answered through investigative work. These questions were: What is the best kind of process for recovering the greatest amount of oil of the best quality at the lowest cost? How should oil shale be refined? How may ammonia and other by-products be recovered from shale, and under what conditions can they be made profitable? What are the best methods of mining shales, in accordance with their occurrence?

Contemplated expenditures to be made the first year, as outlined by Dr. Holbrook, include $30,000 for the erection of buildings and laboratories, $35,000 for experimental retorts and accessories, $12,500 for acquisition of a shale mine and $8,600 for construction of an experimental shale oil refinery. The field force personnel would consist of one engineer in charge, one mining engineer, one assistant petroleum engineer, one oil shale technologist, one assistant oil shale technologist, two junior petroleum chemists, one head clerk, one clerk and three laborers. One petroleum chemist and one clerk would be added to the force in Washington.

EDITOR CHOSEN BY PRESIDENT AS GOVERNOR OF ALASKA

Scott C. Bone has been nominated by President Harding as governor of Alaska, to succeed Thomas Riggs, Jr. Mr. Bone was formerly editor and publisher of the Washington *Herald* and was publicity director for the National Republican Committee during the last campaign.

COMMITTEE ON MINING LAW REVISION REPORTS NEW CODE

THE COMMITTEE on Mining Law Revision appointed by the director of the United States Bureau of Mines on January 23, 1917, has reported a bill of 5,000 words, codifying in one law "all of the existing laws relating to the location of mining claims on the public domain" and making amendments thereto "to comply with the concensus of opinion in the mining industry and to conform to present day conditions of mining." A full synopsis thereof will be printed in the bulletins issued by the American Mining Congress.

The report of the committee has been referred to the House Committee on Mines and Mining and to the Secretary of Interior. Some of the recommendations embodied in the code have already been made to Congress by the Interior Department.

NAVAL RESERVES TRANSFERRED—President Harding has signed an order transferring from the Navy Department to the Interior Department the administration of the naval oil and oil shale reserves. The order covers the two oil reserves in California, 68,249 acres; the oil reserve in Wyoming, 9,481 acres; the shale reserve in Colorado, 45,440 acres, and the shale reserve in Utah, 86,584 acres. The transfer was made pursuant to the President's policy of co-ordinating the work of the different departments.

GOLD ACTIVITY IN NORTHWEST ARIZONA

(Arizona Correspondence by J. E. CURRY, Secretary Arizona Chapter)

FOLLOWING CLOSE in the wake of the cessation of copper mining activities throughout the state, renewed interest in the development of some of the promising gold and silver districts of Arizona has been awakened. The most notable instance of recent activities is in that section of Northwestern Arizona (Mohave County) known as the Secret Pass and Union Pass districts, lying in the Black or River Range, approximately fifteen miles north of the town of Oatman, which for many years has been furnishing the major part of all the gold produced in the state. After lying idle for several years, the resumption of development of the Nancy Lee mine in Secret Pass is being followed with more than ordinary interest, since this property has always been regarded by those most familiar with the "signs and ear-marks" of the country as possessing attractive possibilities. The work at this property is being centered in a strong true-fissure vein of calcite-quartz, with adaluria, flurite and manganese oxide. A few miles distant from the Nancy Lee property in Secret Pass, another mining property (long idle) known as the Katherine has recently been opened up by its owners—the Sutro interests of San Francisco—to the 400-foot level, in which property it is said several million dollars in gold ore carrying a fine milling average has already been blocked out. It is understood that plans are being considered for the erection of a milling plant to be located a short distance from the Colorado River and the mine, to handle the Katherine ores.

It has been reported recently that the "Sunbeam," another promising property of this district, has recently been optioned to and examined by W. J. Loring of the Carson Hill Company, and president of the American Mining Congress.

Still another property—the Gold Chain—located between Secret Pass and the Katherine, has been attracting considerable notice and favorable comment, since its development has been under way the past two months, directed by a company of San Francisco gold operators. It is freely predicted that the Gold Chain may soon be in the "milling class." When it is considered that the two older operating mines (The Tom Reed and the United Eastern) lying just south of the Secret Pass—Union Pass districts, have furnished over 125,000 ounces of Arizona's 1919 gold production, and over 136,000 ounces of the 1920 production, it will be seen that the above mentioned new district lies "in an aristocratic neighborhood"—for the desert.

ARIZONA'S NEW EXPLOSIVE PLANT.—A meeting of the directors of the Apache Powder Company was held some time since at the company's office in Bisbee, Arizona, being attended by the following: T. H. O'Brien, general manager, Inspiration Consolidated Copper Co.; Thomas H. Collins, director, Calumet & Arizona Mining Co.; F. W. Maclennan, general manager, Miami Copper Co.; Norman Carmichael, general manager the Arizona Copper Co., L'td; J. E. Curry, secretary Arizona Chapter, American Mining Congress.

The plant of the Apache Powder Company is located on the San Pedro River, a short distance from the town of Benson, in Cochise County, and is in the final stages of its construction period. The moving spirit of the enterprise is Mr. Charles E. Mills, president of the company (formerly general manager of the Inspiration Consolidated Copper Co.), through whose unfaltering energies the plant has reached the near-completed stage after approximately only ten months of actual work in construction. The direct charge of construction has been handled by the company's manager, W. W. Edwards, assisted by D. E. Fogg.

PHELPS DODGE CLOSES OFFICE.—Effective May 15 and to continue throughout the present copper depression, the Phelps Dodge Corporation closed its general manager's office at Douglas, Arizona. General Manager P. G. Beckett will spend a part of the summer and fall out of the state.

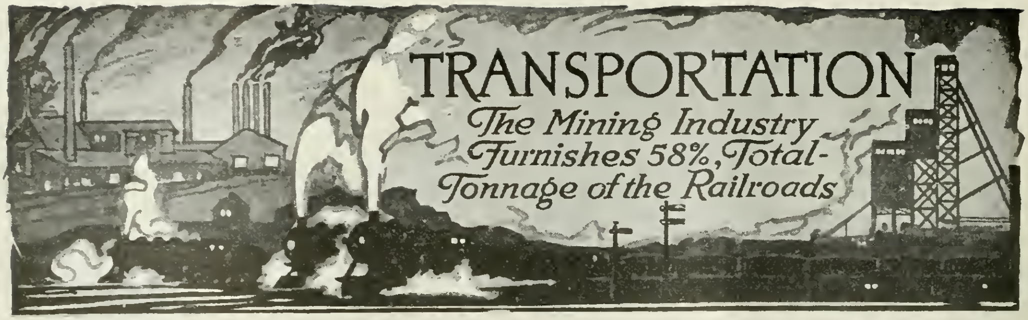
NANCY LEE CHANGES HEADQUARTERS.—At a recent meeting of the Nancy Lee Mining Company, operating a gold-silver property in Secret Pass, Arizona, it was decided to change headquarters of the company from Bisbee to Kingman, Arizona, in order to facilitate the dispatch of its business. Kingman is the railroad point for the mine, being twenty-three miles distant, and the center of mining activities in Mohave County. The new officers elected are John Olson, president and general manager; Fred T. Bragonier, vice-president, and Robert B. Manson, secretary and treasurer, who, with Senator Henry Lovin, Dr. Robert Ferguson and Mr. H. J. Hierl, compose the directorate.

EXODUS OF MEXICAN MINE LABORERS.—P. R. Milnes, former secretary to Governor Campbell, recently appointed state immigration commissioner, passed through Bisbee for Phoenix on his return from Nogales, where he had gone to arrange for the return to their homes in Mexico of several hundred unemployed Mexicans from the Salt River Valley who, during the cotton picking season, were employed by the farmers in the Phoenix and Tempe agricultural districts. These Mexicans were brought from Mexico into the farming districts by special permission of the U. S. Government.

The exodus of unemployed Mexicans from the mining districts began upon the closing down of the copper mines and smelters and has continued until these districts are almost deplete of this class of labor. It is expected these Mexicans will return to the copper camps and the cotton fields when both these industries, now in a bad way, show signs of revival.

ARIZONA PERSONALS.—P. G. Beckett, general manager Phelps Dodge Corporation, expects to spend a part of the present summer in the east—A. G. McGregor, construction engineer of Warren, Arizona, has recently sailed out of New York to visit the Cerro de Pasco mine in Peru, for which he is building a new smelter—H. Kenyon Burch, consulting engineer for the Phelps Dodge Corporation, who is constructing the new concentrating plant near Bisbee to treat the ores of Sacramento Hill, has recently returned to Bisbee from a trip of inspection to the Moctezuma Copper Co.' plant at Nacozari and the Burro Mountain Branch of the P. D. Corporation, where work under his direction is under way—Robert E. Tally, general manager, United Verde Copper Co. at Jerome, and governor of the Arizona Chapter of the American Mining Congress, has returned to Jerome after a business trip to California points—John C. Greenway, general manager, Calumet & Arizona Mining Co. and New Cornelia Copper Company, has been spending a great deal of time in the field, including Mexico, in the interest of his companies—Arthur Notman, superintendent mine department, Copper Queen Branch, Phleps Dodge Corporation, left May 19 for a vacation of several months in the Adirondack mountains of New York.

WAR MINERALS BODY REDUCED.—Resignations of Philip N. Moore and John F. Shafroth of the War Minerals Relief Commission became effective May 20. Horace G. Pomeroy now has charge of pending appealed cases. The remainder of the organization consists of J. H. Means, chief engineer, a field auditor and a small clerical force. Work of the commission is practically at a standstill.



RAILROAD EXECUTIVES ANSWER CHARGES OF INEFFICIENT MANAGEMENT

By C. H. Farrell

THE SENATE COMMITTEE on Interstate Commerce has been conducting a general investigation into the railroad situation during the last two weeks, with a view to determining just what the difficulties are and to what extent they can be remedied.

Chairman Cummins opened the investigation by reading into the record a statement showing that while the operating revenues have increased since 1913, there has been a greater increase in operating expenses, so that for the year which ended on March 1, 1921, the net operating income of the carriers was only \$2,578,922 compared with \$787,610,435 in 1913. The ratio of operating expenses to operating revenues increased from 69 percent to 94 percent. "The problem before us is to try to ascertain whether the \$6,000,000,000 received as operating revenues for the year which ended on March 1 last was wisely, economically and effectively expended. If we cannot increase revenues we have about reached our limit and the expenses of the railroads of the country must be reduced if the railroads are to be successful." This is the announcement made by Chairman Cummins.

The railway executives announced on the eve of the hearing that they would go before the committee in the belief that the transportation crisis through which we are passing is not peculiar to the United States, but has grown out of world conditions chargeable, in most instances, to the war; that the worst part of the difficulty has been passed and that the Transportation Act has not broken down, is not responsible, and should be given a thorough trial. The carriers do not seek any amendment to existing law, and expresses regret that the situation is such that wages must be reduced. As to rates, the policy is said to be a desire to render economical and efficient service at a rate which will promote the movement of the largest possible amount of traffic, although the carriers feel that adequacy of facilities is of more importance to the shipping public than the amount of the rate. The carriers further contend that the abnormal expenses of 1920 were almost entirely beyond their control and that a large part of them was forced by government action.

The first witness to be called was Julius Kruttschnitt, chairman of the board of directors of the Southern Pacific Company, and his testimony and cross examination consumed the first week of the inquiry. Daniel Willard, president of the Baltimore & Ohio Railroad, has occupied the stand during the balance of the hearings to date.

The attitude of these executives can be summed up under the following heads:

INCREASED RATES.—The present rates are not responsible for the great falling off in the movement of traffic and the public is being misled in that direction, because the cost of transporting commodities at the present time is far less than the toll taken by commission merchants and retailers for buying and selling the same commodities, and if lower rates would bring about increased traffic the carriers would, as a matter of good business, desire such rates. The reduction in traffic is laid at the door of general business conditions, which, it is said, would have come if there had been no advance in freight rates, and although the prices of commodities reached their maximum early in 1920 and fell with great rapidity up to the time the advanced rates took effect, the traffic itself did not drop until at least four months thereafter. The ocean situation is cited as proving this contention, for while at the present time ocean rates have reached the lowest point in their history, there is also an excessive supply of ships.

Mr. Kryttschnitt said that there were many commodities which could not move if all rates on them were abolished because there are no markets for the producers. The states of Arizona and Nevada were used as instances where no increased interstate rates were in effect but where the intrastate traffic declined 50 percent while the intrastate traffic in that same section declined 41 percent although it was paying the increased rates allowed by the commission. Taking the Texas cotton crop, Mr. Kruttschnitt showed that because of reductions in water rates the cost of shipment from producing points to Liverpool had been reduced about \$1.28½ per 100 pounds, and in spite of this one-half million bales of cotton less than normal have been exported to Liverpool. The difficulty here is the absence of demand by both foreign and domestic purchasers. From the Imperial Valley of California about 54,000 bales of cotton remain unshipped, notwithstanding the fact that there is a rate through the Panama Canal as low as the rail rate available prior to the last increase in rail rates, and notwithstanding that the ocean rates across the Pacific and across the Atlantic have been reduced more than \$1 per 100 pounds. The exports of rice, salmon and dried fruit fell off more than 50 percent during September, October and November of last year, as compared with the previous year, although the reduction in ocean rates was substantially more than the increase in inland rail rates. Mr. Kruttschnitt stated that the troubles of the California lemon grower were not attributable to the freight rates, inasmuch as there was a rate by sea less than half of the rail rate, in spite of which the lemons remained in California, although during the months of November and December, 1920, and January and February, 1921, after the increase in freight rates, there were more lemons shipped than in the corresponding months of the previous year.

Mr. Kruttschnitt attributes the failure of the increased rates to produce sufficient revenue to the following: first, the action of the state railroad commissions in refusing to allow the intrastate rates to be raised to the level prescribed by the Interstate Commerce Commission for interstate rates; second, the depletion of railroad revenues by agencies created by the government and paid for by taxes to which the railroads themselves contributed largely, and to which agencies they lost traffic which the carriers themselves had created and fostered.

Mr. Willard expressed the opinion that in order to make private ownership a success it is not necessary to raise rates to levels which retard traffic and that it was not necessary to do so before the war. He expresses the opinion that as soon as the revenues and operating costs of the railroads can be brought to a proper relationship the problem now facing us will be largely, if not entirely, solved.

INCREASED OPERATING EXPENSES.—In explaining the decrease in operating revenue in 1920 under 1919, of $454,025,669, Mr. Kruttschnitt called attention to the fact that while the increase in operating revenues was $1,041,338,541, the increase in operating expenses, taxes and rents, was $1,495,364,210. This large increase in expenses was attributed almost entirely to increased labor costs and the payment for materials and supplies at prices fixed during federal control and contracted for by the government. It was said that 64 cents out of every dollar of operating expenses during 1920 went to labor at wages fixed by the government; 30 cents was paid for materials and supplies, at least one-half of which was purchased at prices fixed by the government during federal control; 3½ cents went to operating expenses other than for labor, material and supplies for the first two months of 1920 during which time federal control was in effect, making a total of 82.5 cents out of every dollar paid for expenses at prices directly fixed by the government. The remaining 15 cents paid for materials and supplies was at prices fixed by general market conditions over which the carriers had no control, making a total of 97.5 cents out of every dollar of operating expenses spent by the carriers during 1920, an item which cannot be charged to inefficiency or bad management because the carriers could not in any way influence it.

LABOR CONDITIONS.—Passing to the question of labor, Mr. Kruttschnitt stated that there cannot be any proper dissent from the statement that by far the largesr contributing cause of the abnormal amount of railroad operating expenses is the cost of labor. He divides this cost into direct and indirect classes, the direct being that paid directly to labor and the indirect that paid to labor in the increased cost of materials and supplies. During 1916, prior to the Adamson law, the carriers' labor bill was $1,468,576,934. There was a substantial increase in 1917 due to the Adamson law, a subsequent increase in 1918 made by the Railroad Administration, a further increase in 1919 by the same agency, and a final increase in 1920 by the Labor Board, raising the total labor bill for 1920 to $3,698,-216,351, an increase over 1916 of $2,229,639,-957, and an increase over 1917 of $1,958,734,-209. The increase made by the Railroad Labor Board in 1920 was not in force during the whole year, but if it had been there would have been a further increase which is estimated at about $280,000,000. The actual increase for 1920 in the labor bill was 115 percent, and would have been 128 percent if the increased scale had been in effect during the entire year. During this period the gross revenues of the carriers increased less than 54 percent. Both Mr. Kruttschnitt and Mr Willard were emphatic in their statements that the labor cost was directly due to government action beyond the control of the carriers and out of all proportion to the increased rates. Mr. Kruttschnitt also illustrated many instances where the national agreements had worked out to the great financial disadvantage of the carriers, and the readers of this page are familiar with many of those instances.

EFFICIENCY.—The carriers believe that during the period since the termination of federal control the efficiency of private management has been amply illustrated, and Mr. Willard called attention to the fact that during 1920 the carriers handled nine billion net tons more than they ever handled before in the same length of time, in spite of the conditions which prevailed at the termination of federal control. The tonnage was the largest in the history of the carriers, and Mr. Willard cited figures to show that the increases in expenses over 1919 were not out of line with the increased service performed, and further contends that they prove that there was a measure of economy. As to the efficiency of private management, Mr. Kruttschnitt said that the carriers handled the increased traffic of 1920 with fewer train miles than were used in 1918 to carry the smaller traffic of that year. The loaded car mileage was said to have been greater in 1920 than in 1918 or 1919, and the empty car movement was also in excess of those years. The revenue tons carried per freight train were greater in 1920 than in any previous year, and the miles run per freight car per day were greater in 1920 than in 1919 and the same as in 1918, while the average number of tons per loaded freight car was greater in 1920 than in either of the previous three years.

This inquiry will be continued indefinitely and all parties concerned, including the carriers, labor unions, security holders and shippers, will be given an opportunity to testify.

MINES USE RECORD QUANTITY OF EXPLOSIVES

MORE THAN 90 PERCENT of all explosives manufactured in the United States last year were used by the mines, according to Bureau of Mines calculations. Total consumption by the mines was 9,137,-728 kegs out of 10,195,193 manufactured, or 48,972,715 pounds out of 53,962,841 pounds of permissible explosives and 126,405,571 pounds out of 229,112,084 pounds of high explosives other than permissible.

Production of explosives for the year was 29 percent greater than that of 1919. All classes of consumers used larger quantities, but the principal increase was in coal mining, which ordinarily consumes 80 percent of all black powder and permissible explosives produced and 15 percent of high explosives.

WHY INDUSTRY LANGUISHES

WHEN freight on mine supplies is almost five times as great as the cost of the supplies, prosperity cannot even be anticipated. It is worthy of note that such a situation not only exists, but also is so extraordinary as to call for mention in *Labor*, a weekly published in Washington, D. C., and known as an advocate of the Plumb Plan and similar devices. A communication to the editor of *Labor*, is reproduced herewith:

To the Editor of LABOR:

A friend who happens to be in the lumber business gave us one great big reason why some of the big mines in the State of Arizona are closing. Note the figures as to the cost of a carload of lumber purchased in Oregon and shipped for the use of one of the big mines of the state:

Freight	$865.40
War tax	25.96
Total	$891.36
Timber cost at mills	187 40

Did you ever hear of anything more eloquent that the above figures?

HENRY STEVENSON.

Miami, Ariz.

THE HIGH COST OF STRIKES

AN ANALYSIS of strike movements in mining, iron and metal industries in the principal countries of the world during the first six months of 1920 has been made by the ASSOCIATED INDUSTRIES OF AMERICA (Butte, Mont.). It shows that countries which claim the most advanced welfare arrangements had the most strikes, and the advantage gained by strikers was small in proportion to wage loss. Two-thirds of the strikes were lost completely by the men, and only in one-third were the strikers more or less successful. This association's summary follows:

Countries	Persons Involved	Lost Working Days
Germany	985,550	8,896,600
Australia	300,000	7,500,000
France	502,000	7,027,400
United States	395,000	5,895,000
Sweden	167,600	4,506,450
Italy	181,650	3,299,700
Great Britain	235,040	1,761,600
Belgium	67,000	1,078,400
Spain	81,800	875,000
South Africa	40,000	800,000
Austria	52,100	275,200
Switzerland	1,190	18,300
Total	3,008,930	41,623,650

GEOLOGICAL SURVEY NOTES

STRATIGRAPHIC STUDIES for oil and gas work in Wyoming were begun the second week in May by W. T. Lee. W. T. Thom, Jr., left Washington May 9 for Miles City, Mont., where he joined C. E. Dobbin in work on coal classification and studies of structure in Garfield County, Mont. A topographic survey of the Cold Bay oil field, southwestern Alaska, will be made by R. K. Lynt, who sailed from Seattle two weeks ago. C. E. Siebenthal spent several days making geologic investigations in the Joplin district. An investigation of the ground-water resources of the Mud Lake region, Idaho, was started a week ago by O. E. Meinzer.

GROWING INDUSTRY NEEDS TARIFF PROTECTION

NINE COMPANIES have either built or contemplate building plants which will increase the talc grinding capacity of the country by 500 tons per day, or approximately 150,000 tons per year, according to a survey of the field by Raymond B. Ladoo, mineral technologist of the Bureau of Mines. Of this amount, 235 tons per day capacity has already been built, 85 tons is nearing completion, and 180 tons is contemplated.

The estimated total consumption of 1920, which was the maximum year, was 237,000 tons, or 790 tons per day. Of this amount 24,000 tons was imported. The domestic production therefore was approximately 213,000 tons, or 710 tons per day. The Bureau of Mines makes the statement officially that, "Unless a high protective tariff on talc is enacted, imports will increase rather than decrsase."

LARGE COAL DEPOSITS IN SAN JUAN COUNTY, NEW MEXICO

TWO DISTINCT FORMATIONS in San Juan County, New Mexico, contain coal beds, according to a report of a survey made by C. M. Bauer and J. B. Reeside, Jr., of the United States Geological Survey. The formations extend into the adjacent part of Colorado. In some places, such as Durango, Colorado, and Gallup, New Mexico, mining has continued for many years, but in much of the basin the coal is practically untouched, and little was known regarding the exact distribution and value of the beds until the survey was made by Messrs. Bauer and Reeside.

The older formation in San Juan County extends diagonally across the western and middle parts. The younger formation make a great curve from the north side of the county through the center to its southeast corner, and it is estimated to contain ten billion tons of workable beds at depths less than 1,000 feet beneath the surface. It is believed that there is even a larger supply between one and two thousand feet. Messrs. Bauer and Reeside believe that these beds, together with those below 2,000 feet and those of the older formation, contain an amazingly large amount of coal.

It is pointed out that lack of shipping facilities and strong competition make extensive development in the near future improbable, but it is shown that there is an immense reserve of fuel for the future.

RESCUE CAR AT CHICAGO PAGEANT

ONE of the interesting exhibits at the "Pageant of Progress" to be given in Chicago during the coming summer will be a rescue car operated by the United States Bureau of Mines. M. H. Leopold, safety engineer of the bureau, has announced that one of the cars will be a feature of the government exhibit.

ANALYSES OF IOWA COALS

THE FIRST OF A SERIES of bulletins relating to the quality of coal of the different states has been issued by the Bureau of Mines. It is entitled "Analyses of Iowa Coals" and was prepared by George S. Rice, A. C. Fieldner and F. D. Osgood. It contains data regarding analysis and heating qualities of coal mined in the various counties of the state.

Coal was mined in Iowa during the first half of the nineteenth century, but only in a small way. The earliest reliable production record was for the year 1840, in which the output amounted to 400 tons. In 1860 it had gone to 42,000 tons; in 1880 to 1,461,000 tons; in 1900 to 5,203,000 tons, and in 1917 to 8,966,000 tons. Increases in output would have been more rapid if the coal beds had been thicker and more regular.

It is believed that the original coal supply in Iowa was 29,160,000,000 short tons and that in 1910 about 28,900,000,000 tons was still available. Including the output of 1918, there has since been mined 60,000,000 tons.

Because of the irregularities of the coal beds, the life of the average Iowa mine does not exceed twelve years.

Iowa coals are used for domestic purposes, locomotive and power houses. Markets for the Iowa product are principally local, although shipments are made into eastern Nebraska, where shipments from Colorado offer local competition.

"The development of the coal and the output will probably continue to rise slowly with the industrial growth of the state, but no marked increase in the annual production is possible," the report says. Heretofore little has been done to improve the quality of Iowa coal except hand picking and culling at the point of loading. Much could be done to improve the coarse coal by more adequate picking tables, and to improve the small coal by building washeries at central points where mines are short lived.

EXTENSIVE SURVEY OF OKLAHOMA OIL FIELD COMPLETED

IN THE HEWITT, Oklahoma, oil field, the Bureau of Mines has just completed the most extensive engineering survey and report of a particular oil field which it has ever made. T. E. Swigart and F. X. Schwarzenbek, engineers of the Bureau, spent seven months in the field, and oil operators through the Ardmore Chamber of Commerce contributed $1,000 to expansion of the survey.

The report of the survey is being distributed by the Ardmore Chamber of Commerce. It contains 170 pages, including forty-one illustrations. The subject matter deals with subsurface geology, engineering work as applied to oil field development, drilling and producing methods, curves for estimating future production and contributions from outside engineers on special subjects. The chamber of commerce financed the publication in order to avoid the delay incident to publication by the government.

ADVERTISING WESTERN MINE RESOURCES

THE NATIONAL EXPOSITION of mines and mining, to be held in connection with the Twenty-fourth Annual Convention of the American Mining Congress in Chicago, has found great favor among western editors. The *Mohave County Miner* of Kingman, Arizona, for instance, in an editorial entitled "Advertising Mineral Resources" urged Arizona and other states to put forth their best efforts in this direction. This editorial, because of its more than usual interest, is herewith reproduced in full:

"Nevada claims to have 500 varieties of mineral, while there are but 800 known minerals in the world. The same thing may be said of Arizona, this state having practically every mineral that is known or that has been made useful to mankind. But these two states have been rather lax in failing to make known to the world their wonderful mineral resources. While the American Mining Congress, at its session next October, in Chicago, expects to bring to public as many minerals from the various states as possible, it is not believable that the collectors will be able to secure the many specimens of rare minerals unless the mining public awakens to the importance of this exhibit. There should be no rivalry among the mining states over the proposed mineral exhibits, but each state should take measure of the importance of getting every known mineral into the hands of the collectors as soon as possible, and facts and figures of the productive possibilities of each metal should also be set forth. While Nevada and Colorado, as well as many other states, have passed the peak of their production, Arizona has hardly been scratched. Copper mines, as well as gold, silver, lead and zinc, are to be found in every part of the state, untouched by pick or drill, and these mines will be the producers of the tomorrow. To show to the world that these states still have potential mineral resources that have not been developed should be the aim of each of the states and the groups of mineral bearing counties. A small sum spent by the counties in the gatherings of statistics and minerals will bring much benefit to the various sections, especially where these great interests are dormant and undeveloped."

RETAIL COAL PRICE REPORTS

ACCURATE monthly reports of retail coal prices are expected to be issued soon by the Department of Commerce, working in cooperation with the Department of Labor. The reports are included in the plan for making public statistics on the cost of living much earlier than they have heretofore been published.

SURVEY ENGINEERS SUED

A DAMAGE SUIT for $25,000 against N. C. Grover, John C. Hoyt, C. C. Stevens, and R. W. Davenport, engineers of the Geological Survey, for adversely reporting on his plan for development of water for power purposes in the Potomac River above Great Falls, Va., has been filed in the District of Columbia court by J. H. Levering, a hydraulic engineer. Levering charges that the basis for rejection of his plans was that they competed with plans of the government engineers.

NATIONAL LEGISLATION

THE EMERGENCY TARIFF, the Immigration, and the Army and Navy appropriation bills have taken the spotlight in the House and Senate during the month. The Emergency Tariff Bill produced an enormous amount of argument, which gives a fair idea as to what we may expect when the general tariff bill is presented.

The Immigration Bill as passed is almost identical with the bill passed last session, which was killed by President Wilson's pocket veto. Most of the Democratic members of the Senate were violently opposed to the bill and speech after speech was made against the policy of restriction. However, the Republicans triumphed, many making brilliant speeches in favor of the bill.

Whether we shall have a large army or have no army at all; whether we shall have the most powerful navy in the world or whether we shall completely disarm, were points which were fought with much bitterness and oratory, in the appropriation bills. The House finally decided that an army of 150,000 was sufficient, but the Senate committee on military affairs has recommended increasing this estimate by some 20,000 men.

The introduction of the bill, by Senator Kenyon, which will create a department of public welfare, is exceedingly important as this measure abolishes five branches of the government, including the Bureau of War Risk Insurance. The plan for government reorganization is being taken very seriously, Senator Kenyon's bill being one of the first efforts in this direction. Already there have been introduced two reclassification bills, and the McCormick Budget Bill has passed the House and Senate, and has gone to the White House for signature. The resolution by Senator Smoot providing for the appointment by President Harding of a seventh member of the joint committee on reorganization also has passed the House and Senate and Senator Johnson has introduced a bill providing for a minimum wage for all government employes.

The Farmers' Co-operative Marketing Bill has been passed by the House and sent to the Senate. The bill authorizes the formation of associations for collective marketing with immunity under the Sherman Anti-Trust Law.

The Ways and Means Committee of the House has been working diligently on the tariff schedules and the Senate Finance Committee has started its hearing on revenue tax legislation. These hearings have been confined almost wholly to the abolishment of the excess profits tax and the introduction of the sales tax plan, with particular reference to Senator Smoot's proposal for the establishment of the sales tax.

Considerable interest has centered around the Senate Interstate Commerce Committee, which has been considering the coal bills, in regard to the Federal Control Act, a Federal Coal Commissioner, and the Seasonal Rates. The latter two bills have been favorably reported from the committee. H. R. 824 (Federal Coal Commissioner), which was reviewed in last month's JOURNAL, has now been merged into Senate 1807, which is reviewed in this issue and S. 41 (Seasonal Rates), reviewed in the May issue of the MINING CONGRESS JOURNAL, has been merged into S. 1806, which is now known as the Coal Stabilization Bill and has been reported favorably from committee. Senator Frelinghuysen in reporting the bill said that its object is to direct the Department of Commerce and the Bureau of Mines to make a careful study of all conditions pertaining to the coal industry in order that the government may assist in the stabilization of the industry. He insisted that its object was not interference but that the government would act in a co-operative and advisory manner.

Several bills have been introduced suspending annual assessment work on mining claims. Senator King's bill would exempt mining claims from doing assessment work until July, 1923; Representative Hudspeth would relieve the claim owners for the year 1920 and 1921; Senator Bursom's Bill exempts for the years 1921 and 1922; Senator Pittman had the Senate pass a bill at the last session, changing the period of assessment work from the calendar to the fiscal year but has asked for a reconsideration and the bill was referred back to the Committee on Mines and Mining for the purpose of having 1920 assessment work extended until 1922.

The coming month bids fair to be a lively one in interest of the mining industry. It is expected that progress will be made on the tariff, revenue and coal bills. The MINING CONGRESS JOURNAL will give complete résumés of all legislation introduced. The following bills will be of interest to the industry.

COAL

S. 1806. Introduced by MR. FRELINGHUYSEN. The seasonal coal freight rate bill formerly S. 41, reviewed in May issue, was favorably reported from the Senate Committee on Interstate Commerce on May 14. As amended it reads as follows:

"In order to promote continuous operation of coal mines, steady employment of coal miners and economical use of facilities for distribution of coal, the commission is hereby authorized to initiate, establish, approve or adjust rates for the transportation of coal during specified seasons or periods which shall be greater or less than the rates for other specified seasons or periods but which in the judgment of the commission will yield as nearly as may be the same annual revenue for like movement as rates without seasonal variation, to be maintained by carriers as a whole or as a whole in each of such coal rate groups or territories as the commission may from time to time designate for that purpose, or by such carrier or carriers as the commission may designate. The term "coal" shall include anthracite and bituminous coal, lignite, coke, including petroleum coke, and briquettes and boulets made from anthracite and bituminous coal and from coke. Whenever the commission is of opinion that an emergency affecting the transportation of coal and requiring immediate action exists in any section of the country the commission shall have, and is hereby given, authority, either upon complaint or upon its own initiative without complaint, at once if it so orders without answer or other formal pleading by the interested carrier or carriers, to suspend the operation of any schedule in so far as it affects coal rates, whether seasonal or not, upon filing with such schedule and delivering to the carrier or carriers affected thereby a statement in writing of its reasons for such suspension, and defer the use of such coal rates, and to initiate in lieu thereof such seasonal rates for the transportation of coal as in its judgment the emergency may require. The commission shall thereupon enter upon a hearing concerning the lawfulness of the schedule, the operation of which

TOTAL BILLS INTRODUCED THIS SESION: 8314

GOLD:
- **H.R. 5025: Mr. McFadden (Excise Tax)**
- **H.R. 4100: Mr. Raker (California Debris Commission)**
- **H.R. 5513: Mr. Husted (National Monetary Commission)**
- **H.R. 2182: Mr. MacGregor (Interchangeable value gold and silver throughout world)**

COAL:
- **S. 1806 (Formerly S. 41) Mr. Frelinghuysen (Seasonal Coal rate)**
- **S. 1807: (Formerly S. 824) Mr. Frelinghuysen (Federal Coal Commissioner)**
- **H. Res. 41: Mr. Lampert (Survey Coal Lands in U. S.)**
- **H.R. 2504: Mr. Butler (Fuel for Navy)**

TARIFF:
- **H.R. 5523: Mr. Rhodes (Cobalt)**
- **H.R. 3182: Mr. Ten Eyck (Tariff Commission)**
- **S. 25: Mr. Poindexter (Tariff Commission)**

REVENUE:
- **S. 233: Mr. Pittman (Amending Revenue Act, exemption gold, silver)**
- **H.R. 6039: Mr. Conoolly (Amending Section 213)**
- **H.J.Res. 59: Mr. Fess (Committee to Review Tax System)**

ASSESSMENT WORK:
- **S.J. Res 32: Mr. Bursum (Suspension 1921-1922)**
- **H.J. Res 99: Mr. Hudspeth (Suspension 1920-1921)**
- **H.R. 2919: Mr Sutherland (Annual labor claims in Alaska)**
- **S. 231: Mr. Pittman (Changing Date for Assessment work)**

PUBLIC LANDS:
- **S. 999: Mr. Harrison (Patent to mining claims)**
- **H.R. 4812: Mr. Hayden (Copper at depth)**
- **S. 563: Mr. Harrison (Amendment Leasing Bill)**
- **H.J. Res. 38: Mr. Barbour (Amendment Leasing Bill)**
- **S. 179: Mr. Smoot (Boron Deposits)**

LABOR:
- **S. 408: Mr. Kenyon (Department Social Welfare)**
- **S. 681: Mr. Kenyon (National Employment Service)**
- **H.J. Res. 3: Mr. Black (Railroad Wages)**
- **S. 1673: Mr. Sheppard (Interstate Cooperative Asso.)**

WAR MINERALS:
- **S. 1361: Mr. Robinson (Liberalization)**
  Mr. Shortridge (Favorably reported from Committee)

BLUE SKY:
- **H.R. 2352: Mr. Taylor of Colorado (Federal Stock Act)**
- **S. 1612: Mr. Capper (Federal Trade Commission)**

ANTI-TRUST:
- **S. 550: Mr. Harrison (Amending Sherman Law)**
- **H.R. 2373: Mr. Volstead (Asso. Agricultural Producers)**

INTERSTATE COMMERCE:
- **S. 16:, S. 690:, S. 552:, S. 621:, S. 15:, S. 922:, H.R. 2409:, H.J. Res. 1: Amending Laws pertaining to Interstate Commerce.**

IMMIGRATION:
- **H.R. 4075: Mr. Johnson (Passed House and Senate)**

GOVERNMENT DEPARTMENTS:
- **S. 551: Mr. Harrison (Western Branch Interior Dept.)**
- **S. 230: Mr. Pittman (Division Mines and Geology)**
- **S. 1607: Mr. Kenyon (Dept. Public Welfare)**

OIL:
- **S. 323: Mr. McKellar (Oil lands foreign Governments)**
- **H.J. Res. 10: Mr. Gallivan (Oil lands foreign Governments).**

had been so suspended, and the proceedings thereon shall be the same as nearly as may be as those provided in paragraph (7) of section 15. Nothing contained in this paragraph shall be construed as repealing, modifying, or denying any other authority heretofore conferred upon the commission."

S. 1807. Introduced by Mr. Frelinghuysen; formerly *S.* 824, reviewed in May issue; referred to the Committee on Interstate Commerce. This bill was favorably reported from the Senate Committee on Interstate Commerce on May 14, in which committee it was amended. It is expected that modification of the bill will be decided upon at a conference with the coal interests. The bill as reported places the administration entirely within the Commerce Department. Officials of the Bureau of Mines and Commerce Department prefer that the authority be divided between them.

The bill as amended provides that in case of an emergency and whenever necessary in the judgment of the President, upon proclamation of the President, the Secretary of Commerce is directed to investigate costs and profits in connection with the mining, sale, storage, and distribution of coal;

To investigate labor conditions, including wages, working conditions, and practices, terms of employment, and the living expenses of miners;

To investigate the practicability of a statutory zoning system defining the distance from the mine in which coal may be transported in commerce and requires a report relative to the same by December 5, 1921.

The bill authorizes the Director of the Bureau of Mines, under the direction of the Secretary of the Interior, to investigate the methods and processes for the storage, inspection, sampling, analysis, purchase, classication, and economical utilization of coal, with a view to determine the most efficient means for coal storage, and to obtain information relative to the processes involved in the preparation, transportation, and utilization of coal.

The Director of the Bureau of Mines, under the direction of the Secretary of the Interior is to investigate the practicability of prescribing standards for the various kinds and grades of coal and requires a report relative to the same by December 5, 1921.

The Secretary of Commerce and the Director of the Bureau of Mines are required to submit annual reports setting forth the work and activities of their offices, together with such recommendations as they may desire to make for further legislation relating to the mining, distribution, transportation, or sale of coal.

The Director of the Bureau of Mines, with the approval of the Secretary of the Interior and the Secretary of Commerce is to make all rules and regulations necessary for the enforcement of this bill.

H. Res. 41. Introduced by Mr. Lampert; referred to the Committee on Interstate and Foreign Commerce. (*Survey of Coal Lands.*) This resolution provides that the Federal Trade Commission be directed to make a survey of all coal-bearing lands in the United States and its possessions, to ascertain the present value of all coal lands and coal mines, including the machinery and other equipment used in mining such coal, and to report to the House of Representatives at as early a date as practicable, and not later than December 1, 1921. There shall be appropriated the sum of $50,000 for carrying out the purposes of the resolution.

H. R. 2504. Introduced by Mr. Butler; referred to the Committee on Naval Affairs. (*Navy Coal*). The bill provides that until June 30, 1922, the President is authorized to requisition fuel necessary to the maintenance of the Navy, and to requisition facilities for handling and storing such fuel; and he shall ascertain and pay a just compensation therefor. If the compensation is not satisfactory to the person receiving the same, they shall be paid 75 percent of the amount determined by the President, and will be entitled to sue the United States to recover any further sum as, added to the 75 percent, will make up such amount as will be just compensation for the property so requisitioned, and jurisdiction is conferred on the United States district courts to hear and determine all such controversies. Nothing in the act shall be construed to require any natural person to furnish to the government any fuel held by him and reasonably required for consumption or use by himself and dependents.

TARIFF

H. R. 5523. Introduced by Mr. Rhodes; referred to the Committee on Ways and means. (*Cobalt.*) The bill provides that upon the passage of this act there shall be imposed, levied, collected, and paid upon the following articles named, when imported from any foreign country into the United States or into any of its possessions the tariff duties which are herein prescribed upon the cobalt content of all cobalt-bearing ores, concentrates, mattes, speisses, and all mixtures and combinations of the same, ten cents per pound; upon the cobalt content of all cobalt oxide of, cobalt sulphate, cobalt carbonate, cobalt acetate, cobalt chloride, cobalt hydrate, cobalt nitrate, cobalt linoleate, cobalt resinate, cobalt tungate, etc., and all cobalt alloys of which cobalt is a component part, $1 per pound; and upon all other chemicals, compounds, and mixtures a tariff of 33⅓ percent ad valorem on the cobalt content contained therein shall be imposed.

H. R. 3182. Introduced by Mr. Ten Eyck; referred to the Committee on Ways and Means. (*Adjustment duties by Tariff Commission.*) The bill provides that whenever and as often as the Tariff Commission, after hearing, on a complaint, finds that in the case of any article there exists a condition of competition of foreign industries with those of the United States whereby producers in the United States are placed at an unfair disadvantage as compared with foreign producers, and additional revenue is needed, and that such condition is facilitated by the then existing rate of duty or absence of duty on such articles, it shall certify to the Secretary of the Treasury, a rate of duty on such article which it finds would remove such unfair disadvantage and within sixty days after the certification the rate of duty on such articles shall be specified in the certificate. It also provides that when the Tariff Commission shall find that in the case of any article there exists any trust, combination, association or arrangement among producers or dealers whereby the price of the article is unduly enhanced, it shall also certify to the Secretary of the Treasury the rate of duty on such article which it finds would remove such undue enhancement. In ascertaining the existence of the condition of competition, the commission shall take into account the cost of production of the article at home and abroad with special reference to prices paid labor, raw materials, producers' prices and retail prices.

S. 25. Introduced by Mr. Poindexter; referred to the Committee on Finance. (*Enlarging the duties of the Tariff Commission.*) The bill makes it the duty of the commission to ascertain as nearly as possible such facts and information concerning the production and manufacture of articles of trade in this country and foreign countries as will enable it to determine the comparative cost of production and manufacture of the same in this country and abroad. It shall also ascertain such other facts as the conditions of production and manufacture, including the amount consumed, the amount produced, and the amount imported into this country, what rate of import duty would place the domestic and foreign producer and manufacturer upon an equal competitive basis. When the commission shall decide upon a rate for any article, it shall issue an order declaring the amount thereof and such amount is fixed as the rate of import duty upon such article. The commission shall at all times avoid sudden and extensive changes which will unsettle the general business of the country, it being the intention of the act that such changes shall be made by degrees, so as to adjust tariff rates to the principle of just protection and fair competition and to keep the same adjusted from time to time according to changing conditions of trade and industry.

REVENUE

H. J. Res. 59. Introduced by Mr. Fess; referred to the Committee on Ways and Means. (*Reviewing Federal Tax System.*) The resolution authorizes the President to appoint a commission consisting of eleven members, three from the Senate and three from the House of Representatives and five additional members to be selected outside of Congress, whose duty it will be to consider the subject of taxation and report their findings and recommendations not later than July 1, 1921. Provisions are made covering the actual traveling expenses of the members of the commission while engaged upon the work of the said commission. The sum of $25,000 is appropriated to meet the expenses of the commission.

H. R. 6039. Introduced by Mr. Connolly; referred to the Committee on Ways and Means. The bill amends the act entitled "An Act to provide revenue, and for other purposes," approved February 24, 1919, by adding after paragraph 8 of section 213 the following: That so much of the amount received by an individual as dividends or interest from domestic building and loan associations, organized and operated exclusively for the mutual benefit of their members' as does not exceed $500. Income received from matured shares of building and loan association stock assigned as collateral for mortgage or stock loans on which no cash payments have been made.

S. 233. Introduced by Mr. Pittman; referred to the Committee on Finance. (*Amending Revenue Act of 1918.*) This bill provides that subdivision C of section 304 of the Revenue Act of 1918, approved February 24, 1919, be amended to read as follows: In the case of any corporation engaged in the mining of gold, or in the mining, milling, or reduction of silver, the portion of the net income derived from the mining of gold or silver imposed by this title, and the tax on the remaining portion of the net income shall be the proportion of a tax computed without the benefit of this subdivision which such remaining portion of the net income bears to the entire income.

H. R. 4100. Introduced by Mr. Raker; referred to the Committee on Appropriations. The bill provides for the appropriation of $200,000 to carry out the provisions of an act entitled "An Act to create the *California Debris Commission* and regulate hydraulic mining in the State of California," approved March 1, 1893.

H. R. 5513. Introduced by Mr. Husted; referred to the Committee on Banking and Currency. (*Creating a national monetary commission.*) The bill creates a commission to be known as the second national monetary commission, who shall at the earliest date practicable inquire into and report to Congress what changes are necessary and desirable in the monetary system of the United States and especially to the end that the purchasing power of the dollar may be stabilized.

H. R. 2182. Introduced by Mr. MacGregor; referred to the Committee on Coinage, Weights, and Measures. The bill attempts to establish a gold currency and a silvery currency on a basis of inter-changeable value throughout the world.

PUBLIC LANDS

S. 999. Introduced by Mr. Harrison (for Mr. King); referred to the Committee on Public Lands. (*Patent to mining claims.*) The bill repeals sections 2325 and 2326 of the revised statutes and in lieu of same provides that any person or association authorized to locate a claim shall prepare a statement under oath showing such compliance, together with a plat and filed notes of the claim, showing accurately the boundaries of the claim, together with application for patent. A copy of such plat, together with a notice of application for the patent shall be posted in a conspicuous place on the land embraced in the plat and there shall be filed a copy of such statement, plat, and application for patent together with an affidavit of at least two persons that notice has been posted, and a copy of the notice in the proper land office, and in a court of competent jurisdiction as and for a complaint or declaration, setting forth that he has located certain claims described in the complaint and set forth in the plat attached to such complaint and that he has performed all the acts necessary to entitle the claimant to a patent. Service of a summons or order to show cause shall then be made upon the register of the proper land office and upon all persons shown by the records of the land office to have made any entry which may conflict with the said claim and upon all other persons who may be actually claiming possession of the land. The register of the land office shal then make such answer and take such steps as he may be advised to protect the interests of the United States in such proceedings, and if such lands are not open to entry, provisions of the law not complied with, or there is any other reason why the claimant is not entitled to a patent, it shall be the duty of the Commissioner of the General Land Office to set up such matters as defenses by answer or pleading on behalf of the United States, denying that the claimant is entitled to a patent and the commissioner shall appear, or be represented, at the trial of said cause in behalf of the United States. After notice of application for patent has been published for sixty days, the court shall appoint a day for the hearing of the proceeding, at which time the applicant shall present proof of his compliance with the law as relating to location and improvement of claim, etc. If there are, at the time of the hearing, adverse claims to possession, the court shall determine the right of possession as between the adverse claimants and make its decision in the premises, which shall be a finding of the necessary facts and a judgment as to whether or not the applicant is entitled to patent. Section 2326 provides that after finding and judgment have been made, the party entitled to have patent to the claim, may without giving further notice, file a certified copy of the judgment roll with the land office and shall pay to the receiver $5 per acre for his claim, together with the proper fees and a patent shall be issued for the claim. If it appears from the decision of the court that several parties are entitled to different portions of the claim, each party may pay for his portion of the claim and file the description with the surveyor general and patents shall be issued to the several parties according to their respective rights. Nothing shall be construed to prevent the alienation of a title conveyed by a patent for a mining claim to any person whatsoever.

ANNUAL ASSESSMENT

S. J. Res. 32. Introduced by Mr. Bursum; referred to the Committee on Mines and Mining. (*Suspension annual assessment work for 1921 and 1922.*) The provisions of section 2324 of the Revised Statutes of the United States, which requires on each mining claim located and until a patent has been issued, not less than $100 worth of labor to be performed, or improvements aggregating such amount to be made each year shall be suspended as to all mining claims in the United States including Alaska, during the calendar years of 1921 and 1922, provided that every claimant of any such mining claim, in order to obtain the benefits of this resolution, shall file or cause to be filed in the office where the location notice or certificate is recorded on or before December 31, 1921, and notice of his desire to hold said mining claim under this resolution.

H. J. Res. 99. Introduced by Mr. Hudspeth; referred to the Committee on Mines and Mining. (*Suspension requirements of annual assessment work on claims during 1920 and 1921.*) The bill provides that section 2324 of the Revised Statutes of the United States, which requires on each mining claim located and until a patent has been issued therefor not less than $100 worth of labor to be performed, or improvements aggregating such amount to be made each year, be suspended as to all mining claims in the United States, including Alaska, during the calendar years of 1920 and 1921. It further provides that every claimant of any mining claim, in order to obtain the benefits of this resolution, shall file or cause to be filed in the office where the location notice or certificate is recorded on or before December 31, 1921, notice of his desire to hold said mining claim under this resolution.

H. R. 2919. Introduced by Mr. Sutherland; referred to the Committee on Territories. (*Annual labor claims in Alaska.*) The bill provides that annual assessment work required by law to be performed on mining claims in the Territory of Alaska may hereafter be done and performed as follows: During each year and until patent has been issued therefor, at least $100 worth of labor shall be performed or improvement made on, or for the benefit or development of, in accordance with existing law, each mining claim in Alaska heretofore or hereafter located. The owner or locator in lieu of labor and improvements may yearly pay to the treasurer of Alaska the sum of $100 and the Territory of Alaska is authorized to expend such funds on the public roads, trails, or bridges in the vicinity of the mining claim in question. The owner of any claim may cause work to be done upon any road, trail, etc., which will tend to benefit and develop his mining claim. The owner of a mining claim in Alaska may perform two or not more than three years' assessment work in one year and upon proof of such expenditure he shall not be required to do any assessment work thereon for the succeeding year, but for no longer than three years. Upon completion of the work required by the owner of a mining claim, he shall make and file with recorder in the precinct where the claim is located an affidavit and in which he shall state the character, locality, and value of the work performed, the time occupied, and the amount actually paid therefor, and any person who shall swear falsely in such affidavit shall be guilty of perjury and on conviction thereof shall be punished as now provided for the crime.

S. 231. Introduced by Mr. Pittman; referred to the Committee on Mines and Mining. (*Annual assessment.*) The bill stipulates that the provision of section 2324 of the Revised Statutes of the United States, as extended and made applicable to the Territory of Alaska by the act entitled "An Act providing a civil government for Alaska," approved May 17, 1884, and the act entitled "An Act making further provision for a civil government for Alaska, and for other purposes," approved June 6, 1900, as amended, which provides that the period within which the work required to be done annually on all unpatented mineral claims shall commence on on the first day of January succeeding the date of location of such claims, such provision being applicable to all claims located since the tenth day of May, 1872, be, and the same hereby is, amended to provide that the period within which the work required to be done annually on all unpatented mineral claims located after the passage of this act shall commence on the first day of July succeeding the date of location of such claims, and that the period within which the work required to be done annually on all other unpatented mineral claims to which section 2324 of the Revised Statutes of the United States as extended to the Territory of Alaska is application shall commence on the first day of July of each year, provided, that the period for performing the work required by section 2324 of the Revised Statutes, as extended to the Territory of Alaska, and by this act beginning the first day of January, 1920, which but for this act would expire the thirty first day of December, 1920, is extended to and including the thirtieth day of June, 1921.

H. R. 5025. Introduced by Mr. McFadden; referred to the Committee on Ways and Means. (*Excise Tax and Bonus.*) This bill is substantially the same as the bill introduced in the sixty-sixth Congress by Mr. McFadden, H. R. 13201. The bill provides revenue from an excise tax of 50 cents per pennyweight of fine gold contained in manufactured articles, to be collected at the time of sale, and for a premium of 50 cents per pennyweight to be paid to the producers of newly mined gold in the United States and its possessions. The government is fully protected under the provisions of the bill from the presentation of other than newly mined gold to receive the premium. The bill differs from H. R. 13201 in that the period has been lessened from five to three years, and that the Secretary of the Treasury is granted full authority to terminate entirely the provisions of the act on three months notice in the event of a return to normal economic conditions prior to the expiration of the same. Exporters of articles containing gold have been exempted, as they were from the payment of the luxury tax, in order not to interfere with foreign competition. Revenue will be derived on all gold articles of foreign manufacture sold in this country. The bill provides an equitable adjustment between the producer and the industrial consumer of gold.

Extensive hearings were conducted in the last Congress on this bill, and it was reported favorably by the Sub-Committee of the Ways and Means Committee before adjournment.

H. R. 4812. Introduced by Mr. Hayden; referred to the Committee on Public Lands. (*Disposal public lands containing deposits of copper at depth.*) The bill authorizes the Secretary of the Interior to grant prospecting permits which shall give the exclusive right for a period of three years to prospect for deposits of copper in rock in place underlying an overburden of wash, conglomerate, or nonmineral-bearing formation in the states of Arizona, New Mexico, Nevada and Utah, the leases to contain 1288 acres or less. The permittee must begin operations within one year from the date of permit and within two years drill one or more test holes, sink one or more shafts to a depth of not less than 500 feet unless copper be discovered sooner. The permit may be extended for a further period of three years if it shall appear that he has complied with these regulations and failed to discover copper. Upon the discovery of a valuable deposit of copper within the limits of the land embraced in the permit and proof of the expenditure in labor and improvements of not less than a sum equal to $25 for each acre and upon the payment of $5 per acre patentee shall be granted to the permittee for the land.

S. 563. Introduced by Mr. Harrison (for Mr. King); referred to the Committee on Public Lands. (*Amending Act for promotion of mining of coal, phosphate, oil, oil shale, gas and sodium on public domain.*) The bill provides that the designation of any lands of the United States or deposits of oil or gas owned by the United States, as being within any known geological structure of a producing oil or gas field, shall not defeat or require the rejection of any application for a prospecting permit under section 13 of the Act of Congress approved February 25, 1920, filed in the proper land office prior to such designation and prior to discovery of oil or gas on the structure, but such applications may, if otherwise regular, be approved notwithstanding the designation. In the event that any such applications have been revoked or denied, the same shall be reinstated as of the date of such revocation or denial.

H. J. Res. 38. Introduced by Mr. Barbour; referred to the Committee on Public Lands. (*Amending Leasing Bill.*) The bill provides that section 18a of the act entitled "An Act to promote the mining of coal, phosphate, oil, oil shale, gas, and sodium on the public domain, approved February 25, 1920, be continued in full force and effect for the period of six months from and after the approval of this resolution, provided, that it shall only be applicable for the settlement or compromising of gas or petroleum placer claims upon which there has been drilled an existing producing well, or a well which has produced oil or gas in commercial quantities, prior to the passage of the act. Section 18a provides that whenever the validity of any gas or petroleum placer claim under preexisting law to land embraced in the Executive order of withdrawal, issued September 27, 1909, has been or may hereafter be drawn in question on behalf of the United States in any departmental or judicial proceedings, the President is authorized at any time within twelve months after the approval of the act to direct the compromise and settlement of any such controversy upon such terms and conditions as may be agreed upon, to be carried out by an exchange or division of land or division of the proceeds of operation.

S. 474. Introduced by Mr. Smoot; *H. R.* 2350 by Mr. Taylor of Colorado, and *H. R.* 2447 by Mr. Parrish. These three bills are substantially the same as those which we have reviewed above, introduced by Messrs. Harrison and Barbour.

S. 479. Introduced by Mr. Smoot; referred to the Committee on Public Lands. (*Boron Deposits.*) The bill provides that hereafter all deposits of boron minerals and lands containing such deposits owned by the United States, except deposits of potassium borates provided for in the act approved October 2, 1917, shall be subject to disposition only in the form and manner prescribed for the disposal of borates of sodium in the act approved February 25, 1920, entitled "An Act to promote the mining of coal, phosphate, oil, oil shale, gas, and sodium on the public domain.

LABOR

S. 408. Introduced by Mr. Kenyon; referred to the Committee on Education and Labor. (*Department of Social Welfare.*) The bill provides for the creation of a department of Social Welfare, with a secretary to receive a salary of $12,000 per year. The duty of this department is to safeguard and promote the social welfare of the people of the United States. It transfers from the Treasury Department to the Department of Welfare the Bureau of Public Health and the Hygienic Laboratory; the Bureau of Education from the Department of the Interior to the Department of Welfare; the Bureau of Industrial Housing and Transportation from the Department of Labor, the United States Employment Service from the Department of Labor, and the office of Home Economics from the Department of Agriculture.

S. 681. Introduced by Mr. Kenyon; referred to the Committee on Education and Labor. (*National Employment System.*) The bill authorizes the promotion of the United States Employment Service to a bureau of the Department of Labor, which shall have a general director to receive a salary of $5,000 a year. The duty of this bureau will be to establish and maintain a national system of employment and assist in establishing and maintaining systems of employment offices in the several states and to coordinate the public employment offices throughout the country by furnishing and publishing as to labor conditions, by maintaining a system for clearing labor between the several states, establishing and maintaining uniform standards, policies and procedure and by assisting in the transportation of workers to such places as may be deemed necessary for the purpose of securing employment. An appropriation of $4,000,000 for the fiscal year ending June 30, 1920, and for each fiscal year thereafter up to and including the fiscal year ending June 30, 1922. Seventy-five percent of the money appropriated shall be allotted on the basis of their respective population. The entire regulations of the bill are transferred to the Secretary of Labor, who is charged with the responsibility of making reports and ascertaining whether the systems in the various states are conducted in accordance with the provisions of the bill.

H. J. Res. 3. Introduced by Mr. Black; referred to the Committee on Interstate and Foreign Commerce. The bill provides that the Railroad Labor Board is directed to inquire into the justness and reasonableness of wages and salaries of railroad employes in the light of present conditions, taking into consideration, among other relevant circumstances, the scale of wages paid for similar kinds of work in other industries, and the relation between wages and the cost of living; and after making such inquiry to make such reductions, if any, of the wage increases awarded in its decision numbered two, of July 20, 1920, as it may find to be just and reasonable.

S. 1673. Introduced by Mr. Sheppard; referred to the Committee on Interstate Commerce (*Interstate cooperative associations.*) The bill creates in the Department of Labor a bureau to be known as the Bureau of Interstate Cooperative Associations, which will authorize any number of persons, not less than fifty, to associate themselves as a cooperative association for the purpose of conducting interstate business on the cooperative plan, the business to be carried on not for profit. Each association will be managed by a board of five directors. The associations are financed through the sale of stock and discretion in the carrying out of the bill is placed with the Secretary of Labor.

WAR MINERALS

S. 1364. Introduced by Mr. Robinson; referred to the Committee on Mines and Mining (*Liberalization.*) This bill amends section 5 of the act approved March 2, 1919, entitled "An Act to provide relief in cases of contracts connected with the prosecution of the war, etc.," by adding the following proviso: All claimants who in response to any personal, written, or published request or demand from any of the government agencies mentioned in said act in good faith expended money in producing or preparing to produce any of the ores or minerals named therein and have heretofore filed their claims within the time and in the manner prescribed by the act, shall be reimbursed such net losses as they may have been found to have incurred and are in justice and equity entitled to from the appropriation in the act, and the unexpended portion of the appropriation carried in the act be continued available for the purposes named above until all claims in the act shall be finally settled or disposed of.

BLUE SKY

H. R. 2352. Introduced by Mr. Taylor; referred to the Committee on Judiciary. (*Federal stock interstate Act.*) The bill provides that every corporation organized for the purpose of engaging in interstate commerce which proposes to offer shares of its stock must file with the Secretary of the Treasury a statement which contains the names and addresses of the board of directors, name of state or sovereign power, under the laws of which the corporation was organized, the purpose for which the corporation was organized and the general nature of the business, capitalization, including authorized amount of its capital stock, the number and classes of shares into which such stock is divided, a description of the respective voting rights, the manner in which the capital of the corporation has been paid in, whether in cash or property, the amount paid in cash, property and for other consideration stated separately, with a description of the character and value of the property and other consideration received by the corporation; the purpose for which the shares are offered; the names and addresses of the vendors; names of public accountants, who have examined the books, etc.; every prospectus, advertisement, etc., must mention this act and that the shares are offered in accordance with its terms. The Secretary of the Treasury is given full authority under the act to carry out its provisions, one of which is the creation of a bureau in the Treasury Department to look after this work. It appropriates the sum of $450,000.

S. 1612. Introduced by Mr. Capper; referred to the Committee on Interstate Commerce. (*Amending Shermon Law.*) The bill provides that before the sale of stock, etc., it shall be necessary to file with the Federal Trade Commission a statement showing the names and addresses of officers, purpose for which corporation is organized, general nature of its business, location of its principal and branch offices, amount and plan of capitalization, consideration for which the stock has been and will be issued, the purposes to which the proceeds of sales of stock will be devoted, a description of the property and assets and the amount and classes of liabilities of the corporation or association, the names of promoters, fiscal agents, and underwriters; the rate of commission, etc., copies of all promotion contracts or agreements. The bill imposes a fine of $5,000, imprisonment for one year or both for violation of its provisions and appropriates the sum of $50,000 for carrying out the act.

ANTI-TRUST

S. 550. Introduced by Mr. Harrison (for Mr. King); referred to the Committee on Judiciary. (*Amending the Anti-Trust Law.*) The bill expressly describes as illegal all contracts, combinations in the form of incorporation, trust, or other form, association, agreement, arrangement, meeting, conference, understanding, or conspiracy for the purpose of monopolizing, dominating or controlling the trade or commerce in any commodity between two or more states, or of fixing or determining the charge or charges at which any commodity shall be sold for transportation or for the purpose of restricting or withholding any commodity from sale or for the purpose of excluding any person from buying or selling or procuring any commodity for transportation. Every person who may engage in or be a party to, any such contract, etc., shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine not exceeding $5,000, imprisonment for one year, or both. A similar fine is provided for every person who attempts to interfere with, restrain, or prevent the movement of passengers or freight in commerce between the states or with foreign nations. The same restrictions are placed around the District of Columbia or with any territory of the United States. Circuit Courts of the United States are vested with jurisdiction to restrain violations of the act.

H. R. 2373. Introduced by Mr. Volstead and reported to the House by the Judiciary Committee on April 26. (*Association of Agricultural Producers.*) The bill authorizes persons engaged in the production of agricultural products to act together in associations in collectively processing and preparing for market, handling, and marketing in interstate and foreign commerce, their products. The association may have marketing agencies in common and may make the necessary contracts and agreements. No member of the association is allowed more than one vote and the association will not pay dividends in excess of 8 percent per annum. If the Secretary of Agriculture shall have any reason to believe that such association monopolizes or restrains trade to such an extent that the price of any agricultural product is unduly enhanced, he may serve upon such an association a complaint stating his charge. The Department of Justice is charged with the enforcement of the order. The bill very carefully defines the method of procedure by the Secretary of Agriculture and the Department of Justice in carrying out the provisions of the act.

S. 983. Introduced by Mr. Capper; referred to the Committee on Agriculture and Forestry. This bill is substantially the same as the bill introduced by Mr. Volstead, authorizing the association of agricultural producers.

INTERSTATE COMMERCE

S. 16. Introduced by Mr. Poindexter; referred to the Committee on Interstate Commerce. (*To prohibit interferenc with commerce.*) The bill provides that a fine not exceeding $10,000 or imprisonment not exceeding ten years, or both for whosoever shall obstruct, delay, hinder, or prevent the movement of commodities in commerce with foreign nations or among the several states shall by word of mouth, or by the presentation, exhibition, or circulation of written or printed words, or otherwise. A fine of $15,000, imprisonment not exceeding fifteen years or both is imposed upon any one who shall obstruct or prevent the movement of commodities in commerce with foreign nations or among the several states by force or violence, or by threats or menace of any kind or prevent any person from engaging in employment or from continuing in employment in any capacity in the production, care maintenance, or operation of any means of such commerce. A fine of $10,000 imprisonment not exceeding ten years or both is imposed for the obstruction or prevention of the movement of commodities in commerce by the destruction of any car, bridge, track, ship or any other means of such commerce or who shall persuade others so to do. The bill also makes it unlawful for two or more persons being officers or directors, etc., of any carrier subject to the act to enter into a combination or agreement which can be submitted for decision to the Railroad Labor Board to hinder the operation of trains or other facilities of transportation for the movement of commodities or persons. A fine of $500, imprisonment for six months or both are imposed for violation of the provisions of the act.

S. 690. Introduced by Mr. Calder; referred to the Committee on Interstate Commerce. This bill provides that the Interstate Commerce Commission, after a hearing, either upon complaint or upon its own initiative without complaint, is of the opinion that shortage of equipment, congestion of traffic, or other unusual impediment to transportation exists or is imminent, upon the making and filing of a report has the authority, first, to suspend the operation of any or all rules, regulations, or practices then established with respect to car service for such time as may be determined; second, to make just and reasonable directions with respect to car service, without discrimination as between shippers or commodities, except that preference may be given to shipments of live stock and perishable property; third, to require such joint or common use of terminals, including main-line track for a reasonable distance outside of such terminals.

S. 552. Introduced by Mr. Harrison (for Mr. King); referred to the Committee on Interstate Commerce. (*Uniform-rates.*) The bill provides that the standard measure of the work and duty performed by a common carrier shall be the ton-mile. Each common carrier of freight by railroad shall on or before January 1, 1922, make and establish a basic rate per ton-mile for the transportation of freight over its lines and shall file such rate with the Interstate Commerce Commission, which, when approved, shall be the lawful basic rate for such carrier at the average revenue per ton-mile received by such carrier in the calendar years 1915 to 1920, inclusive. The Interstate Commerce Commission has the power to indicate the weight capacity of cars according to their relative cubical contents and without regard to the commodities that may be carried therein. They shall prescribe proper rules and regulations to prevent improper packing and loading of cars and shall also prescribe such regulations as to the mixing of commodities in the same car; also rules and regulations governing the loading and use of cars which are designed exclusively for special kinds of freight or commodities. Each carrier must before January 1, 1922, make and file with the Interstate Commerce Commission a new classification of commodities which shall comprehend but five classes. The rate for the first class to be two times the basic ton-mile rate; second class, four times the basic ton-mile rate; third class, six times the basic ton-mile rate; fourth class, eight times the basic ton-mile rate; and the fifth class, ten times the basic ton-mile rate. Each carrier shall file with the commission a new tariff of class rates upon such new classification, which shall become the lawful rates for classified freight consigned in less than carload quantities. The commission shall prescribe proper minimum weights and mileage at which charges for the transportation of classified freight shall be computed. Freight moving in carloads at the ton-mile rate shall be loaded by the consignor and unloaded by the consignee for the use of team tracks in railroad yards. Carriers may by joint arrangement and the approval of the Interstate Commerce Commission, and for the sole purpose of equalizing the factor of mileage between definite regions of production and consumption for certain designated commodities, established common points between which such commodities may move at uniform mileage. The commission also is authorized to ascertain the proper costs including current capital charges for uses of terminal facilities, etc. The bill specifically declares that the policy of Congress is that the reasonable rate for the transportation of freight by common carriers shall be competitive; between rail carriers shall be preserved; that competition between rail carriers and coastwise shipping, river carriage, motor carriage, and other means of transportation shall be preserved in order to establish and maintain rates of transportation at reasonable competitive levels.

H. J. Res. 4. Introduced by MR. BLACK; referred to the Committee on Interstate and Foreign Commerce. It is resolved by Congress that the Interstate Commerce Commission be directed to review its decision of July 29, 1920, and any subsequent changes or modifications thereof, and to make such reductions, if any, of the increased rates, fares, and charges therein authorized as in its judgment will be just and reasonable. This bill abolishes section 15a of the Interstate Commerce Act.

H. R. 2409. Introduced by MR. WRIGHT; referred to the Committee on Interstate and Foreign Commerce. (*Railroad rates.*) This bill provides that for a period of one year commencing thirty days after the passage of the act, all railroad companies and common carriers shal not be permitted to charge any rates, fares, or charges for the transportation of persons or property in excess of the rates which had been fixed and were in force on the 27th day of February 1920. During the year and one month following the passage of the act the Interstate Commerce Commission shall attempt to determine, establish, readjust and fix compensation, rates, fares, and charges. They shall not only determine what compensation, rates, etc., shall be paid into the company but they shall take into consideration an honest, efficient, and economical management, including salaries of officials and employes and reasonable expenditures for maintenance of way, structures and equipment, but also taking into consideration the actual value of the railroad, the business and financial conditions of the section or territory to be affected by such rates, and the profits being made or losses sustained by the businesses and industries in such section and so fix the rate that the compensation received by the railroads will not be out of proportion but in keeping with business and financial conditions and the general depression or prosperity, as the case may be.

S. 621. Introduced by MR. FLETCHER; referred to the Committee on Interstate Commerce. (*Termination Federal Control of Railroads.*) The bill amends Section 206 of the Act to provide for the termination of Federal control of fares, charges, classifications, regulations, or practices which were unjust, unreasonable, unjustly discriminatory, or unduly or unreasonably prejudicial, or otherwise in violation of the Interstate Commerce Act, shall be filed with the commission, within two years after the termination of Federal control against the agent designated by the President, naming in the petition the railroad or system of transportation against which such complaint would have been brought if such railroad had not been under Federal control at the time of the complaint. The commission is given jurisdiction to hear and decide such complaints and all notices and orders shall be served upon the agent designated by the President under subdivision A.

Identical bills have been introduced by Representatives SANDLIN and KINCHELOE, respectively, H. R. 4801 and H. R. 288.

S. 15. Introduced by MR. POINDEXTER; referred to the Committee on Interstate Commerce. (*Long and short haul.*) The bill provides that it shall be unlawful for any common carrier to charge or receive any greater compensation in the aggregate for the transportation of passengers, or of like kind of property for a shorter than for a longer distance over the same line or route in the same direction, the shorter being included within the longer distance, or to charge any greater compensation as a through route than the aggregate of the intermediate rates subject to the provisions of this act. Whenever a carrier by railroad shall, in competition with a water route or routes, reduce the rates on the carriage of any species of freight it shall not increase such rates unless after hearing and an order granting permission therefor by the Interstate Commerce Commission.

Similar bills were introduced by Senator PITTMAN, S. 228, and MR. HAYDEN, H. R. 263.

S. 922. Introduced by MR. LENROOT; referred to the Committee on Interstate Commerce. (*Creation of a national railway corporation.*) The bill provides for a national railway corporation to include eleven persons to be appointed by the President of the United States with the approval of the Senate. One member shall be appointed from among the members of the Interstate Commerce Commission; one shall be appointed from five persons proposed from the National Association of Railway and Utilities Commissioners; two proposed by the employes of the corporation and of railroads controlled by it, acting through their trade-unions and brotherhoods; two proposed by the Chamber of Commerce of the United States; two proposed by the farmers' and agricultural organizations, three proposed by stockholders of the corporation. The Attorney General of the United States shall effect the organization of the corporation, which shall have perpetual succession subject to dissolution by act of Congress. It shall have the power to make contracts, incur liabilities, acquire, own and control railroads, maintain the necessary offices to conduct this business; to lay out, operate, construct, furnish and maintain the railroads.

IMMIGRATION

H. R. 4075. Introduced by MR. JOHNSON; referred to the Committee on Immigration and Naturalization. (*Limiting Immigration.*) This bill is now a law, having passed the House and Senate and signed by the President, becoming effective June 3, 1921. It provides that the number of aliens of any nationality who may be admitted under the immigration laws in any fiscal year shall be limited to 3 percent of the number of foreign born persons of such nationality resident in the United States as determined by the United States census of 1910. The provisions of the bill expressly exempt from these provisions government officials, aliens residing in the States who return from a temporary visit abroad, aliens in continuous transit through the United States, aliens lawfully admitted to the United States who later go in transit from one part of the United States to another through foreign contiguous territory, aliens visiting the United States as tourists or temporarily for business or pleasure, aliens from countries immigration from which is regulated in accordance with treaties, aliens from the so-called Asiatic barred zone, those who have resided continuously for at least one year immediately preceding the time of their admission to the United States in the

Dominion of Canada, Newfoundland, Cuba, Mexico and the countries of Central and South America and those entitled to readmission under the joint resolution which authorizes readmission for those who have been conscripted or have volunteered for service with the military forces of the United States or cobelligerent forces, or aliens who prove to the satisfaction of the proper immigration officer or of the Secretary of Labor that they are seeking admission to the United States to avoid religious persecution. The Secretaries of State, Commerce, and Labro jointly are called upon to prepare a statement showing the number of persons of the various nationalities residing in the United States as determined by the 1910 census. The number of aliens of any nationality who may be admitted in any month shall not exceed 20 percent of the total number of aliens of such nationality who are admissible in that fiscal year. The Commissioner General of Immigration with the approval of the Secretary of Labor shall prescribe rules and regulations necessary to carry out the provisions of the act.

EDUCATION

H. Res. 72. Introduced by Mr. Fish; referred to the Committee on Education. The bill provides that there shall be immediately enacted a law to the end that the English language shall be the controlling medium in our elementary and high schools, both public and private, and that each school shall be required to teach at least one year of American history and civil government.

INTERIOR DEPARTMENT

S. 551. Introduced by Mr. Harrison (for Mr. King); referred to the Committee on Public Lands. (*Western Branch.*) The bill provides that a branch of the Interior Department be established at a suitable place in one of the public-land states west of the Mississippi River, which shall be designated by the President, and which shall be under the direction of the Secretary of the Interior or an assistant. Section 2 provides that there shall be transferred to said branch from the main office of the Interior Department in the District of Columbia the offices of the Commissioner of the General Land Office, the Geological Survey, the Bureau of Mines, the Reclamation Service, and of the Commissioner of Indian Affairs, and the National Park Service, and the functions and duties of these offices shall be hereafter performed at the branch of the Interior Department created by this act. The Secretary of Interior is authorized to remove and transfer from time to time to said branch of the Interior Department all maps, files, plats, and other records necessary for the proper administration of the duties and functions of such branch. The act approved February 1, 1905, entitled "An Act providing for the transfer of forest reserves from the Department of the Interior to the Department of Agriculture" is repealed and upon the passage of this act the Secretary of the Interior shall execute all laws affecting lands of the United States reserved or acquired under the provision of section 24 of the act entitled "An Act to repeal the timber-culture laws. The sum of $1,000,000 is appropriated for the purpose of procuring a building site and the erection of a building suitable for caring for said branch.

DIVISION OF MINES AND GEOLOGY

S. 230. Introduced by Mr. Pittman; referred to the Committee on Mines and Mining. This bill is similar to the bill introduced by Ex-Senator Henderson in the Sixty-Sixth Congress and provides for the establishment of a division of mines and geology under the control and direction of an Assistant Secretary of the Interior to receive a salary of $10,000 per year. It also provides that all powers and duties now conferred by law upon the Bureau of Mines and the Geological Survey, or any powers and duties conferred by law upon any executive department, commission, bureau agency, office or officer, which in the opinion of the President, relate to mining, metallurgy, and mineral technology or the Geological Survey, the classification of public lands, the examination of the geological structure, mineral resources and products of the national domain are vested in the Division of Mines and Geology.

GOVERNMENT DEPARTMENTS

S. 1607. Introduced by Mr. Kenyon; referred to the Committee on Education and Labor. (*Department of Public Welfare.*) This bill creates a department of Public Welfare, under which department there shall be a division of Education, a division of Public Health, Social Service, and Veteran Service. The bill appropriates $10,000 to carry out its provisions.

OIL

S. 323. Introduced by Mr. McKellar; referred to the Committee on Foreign Relations. (*Oil lands and foreign governments.*) The bill provides that deposits of oil or oil shale, or the manufactured or refined products thereof, in the United States or its Territories, or any land containing such deposits, or any stock or bond interest in corporations owning such land or deposits, when the purpose is to export such products or otherwise to use them in foreign commerce, shall not be acquired by any foreign governments whenever the United States or its nationals having a like purpose are prohibited from acquiring such lands or rights by the governments of such foreign countries. The bill requires the Shipping Board to report on or before July 21, 1921, what foreign governments, dominions, etc., are violating this act and thereafter no oil or oil shale shall be exported to any foreign government or its nationals who have been so reported. If the Shipping Board, by resolution, shall report any government, etc., as violating the act the Président shall at once issue a proclamation declaring an embargo against shipping any of these products to such foreign governments and same shall not be again exported until the Shipping Board reports that the government is no longer violating the act. The provisions included in the Espionage Act shall be enforced for any violation of the terms of this bill.

H. J. Res. 10. Introduced by Mr. Gallivan; referred to the Committee on Foreign Affairs. (*Exploratian of oil in territory controlled by England.*) The bill provides that until and unless England concedes equal opportunities to Americans to explore for and to produce oil in territory controlled by England, English nationals are prohibited from exploring or producing oil in America.

BOLSHEVISM

H. R. 2488. Introduced by Mr. Upshaw; referred to the Committee on Post Office and Post Roads. The bill provides that from and after six months from the date of the passage of this act it shall be unlawful for any individual, firm, association, corporation, or any agent of any firm, individual, etc., to circulate through the mails any paper, magazine, pamphlet, or periodical published in the United States in any foreign language, unless such publication shall carry in parallel column a full and accurate translation of the same in the English language. Any person violating this act will be subject to a fine of $5,000 and one year's imprisonment for each such offense.

METRIC SYSTEM

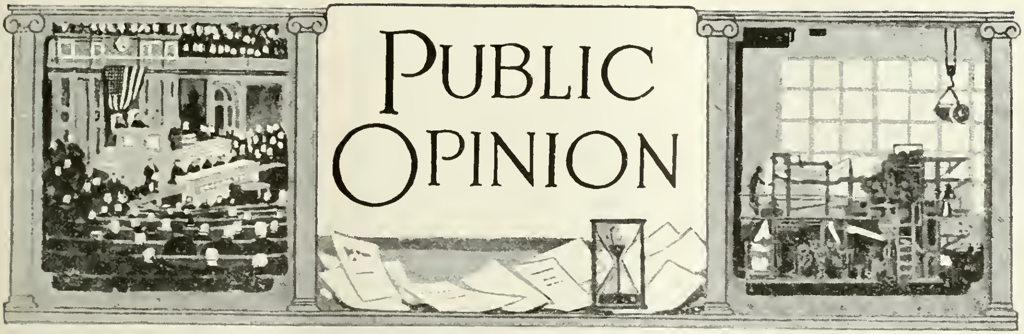
S. 565. Introduced by Mr. Harrison (for Mr. King); referred to the Committee on Agriculture. The bill provides for the establishment of a standard decimal system of weights and measures for the United States.

H. R. 10. Introduced by Mr. Britten; referred to the Committee on Coinage, Weights, and Measures. The bill provides for the creation of a metric system of weights and measures as the single standard of weights and measures.

INDUSTRIAL NOTES

The Automatic Reclosing Circuit Breaker Company of Columbus, has opened a branch office in St. Louis with offices in the National Bank of Commerce Building. Mr. C. P. Lohr will have charge of this office, and with his knowledge of and experience with the company's apparatus, the company feels assured that the interests of its customers in his territory will be handled in a capable and satisfactory manner.

Frederick B. Hyder, E. M., has resigned his position as valuation engineer of the Income Tax Unit, Bureau of Internal Revenue, to resume the practice of mining and metallurgical engineering. He intends to specialize in analytic studies of mineral industries and the solution in co-operation with taxpayers, accountants and attorneys of federal tax problems of valuation, depletion and depreciation of mines and other natural resources. He will conduct offices at 460 Montgomery Street, San Francisco, California.



PUBLIC OPINION

IMMIGRATION

THERE ARE MANY ARGUMENTS pro and con concerning immigration. It is evident that Congress will decide in a very short time as to whether we shall restrict immigration or shall maintain the policy of previous years. SENATOR HEFLIN advances some interesting arguments in favor of complete restriction. In part he says:

"We have tried for a long time to pass an immigration law that would really restrict but we have invariably discovered that there were loopholes through which undesirable people could come. Radical literature distributed at Ansonia, Connecticut, bearing the caption 'The first day of May—the day of reckoning and liberation,' and purporting to be issued by anarchist groups of the United States and Canada, were found this morning. In them workers are advised to refuse to pay taxes and rents, refuse to obey laws, take possession of the land, factories, mills, and mines and to go armed to mass meetings or parades.

"Is this government called upon to open the doors of this country to people who openly and notoriously advise the violation of our laws? Several months ago one of these men who oppose our form of government, unfurled and burned the United States flag before an audience of his kind in New York City. I think some small fine was imposed upon him but he is now again a free man. It is high time for this government to take stock; it is high time that we were finding out here at home just 'who is who' in America.

"If I had my way about it, I would shut our immigration doors tightly for one year at least, and I would very rigidly restrict it for all time to come. I am in favor of putting a commission of loyal Americans on the other side of the ocean to pass on prospective immigrants. I am in favor of having another such commission on this side to examine them and their credentials before they are permitted to set foot upon American soil. It is no small thing to be a citizen of the United States. Today the proudest boast that mortal man can make is 'I am an American citizen.' I know that there are many aliens here who are loyal and true, and they have my very best wishes; but I am speaking of those who do not appreciate our government. I am speaking cold facts. There are people here who defy our courts, challenge the integrity and authority of our flag. They blew up some of our guns and munition plants during the war. They poisoned our horses at the camps. They poisoned food intended for our soldiers. How did they come here? They came here through the gates of American immigration laws."

WILL OLD PRICES EVER RETURN?

EVERY ONE would like to see old prices come back. There are few who find the dollar elastic enough to cover the present high cost of living. E. D. KING of the *Magazine of Wall Street*, has the following comment to make as to whether we can expect old prices to be with us again:

"The United States is in the most favored position of any important nation. The dollar is at a premium in practically every country of the world and will remain so for many years, barring another war or some such calamity. Commodity prices here have been driven down almost within reach of the old levels and in this respect we have made more progress than any other nation.

"Despite the handicap of adverse exchange rates, most foreign countries, including the neutral nations, are making some progress toward lower prices. Prices have fallen in Sweden and the other Scandinavian countries, if not to an equal extent to the United States, at least as much as in the case of the stronger belligerents.

"Investigation of world-wide conditions reveals the fact that deflation is universal. There are exceptions, such as Italy, but the situation in that country only contrasts all the more strongly with conditions elsewhere. In some nations such as the United States and Great Britain, the most complete progress has been made.

"In others, such as France, progress has also been made but not very much. In others, such as Italy, no progress at all has been made. From all this it is difficult to make any general statement that will apply equally in all cases but one general conclusion can be drawn and that is that the high point of inflation has been passed and that considering the force of present economic circumstances, the chances that the old prices will return are exceedingly remote."

EDGE ON TARIFF REVISION

SENATOR WALTER E. EDGE of New Jersey, who is a strong advocate of business and who has been behind President Harding's announcement: "More business in government; less government in business," in an address before the National Foreign Trade Council, with particular reference to our tariff revision, says:

"National prosperity is dependent on production and on industry. Above everything else government co-operation with private business must be substituted for government rivalry, competition, oppression and persecution. All the arbitrary legislation in the world, accomplishing only artificial results, will not effect a permanent cure for economic depression and far less will it stimulate American production, trade, commerce, transportation or any other feature of economic activity. We have tried direct price-fixing by legislation, and indirect price-boosting and all such laws have failed miserably in opposition to or in competition with that inexorable, unwritten law of supply and demand. The belief prevails in some minds that tariff legislation is necessary for the establishment of American production in business. We must recognize, however, that as a creditor nation, exporting three times the value of its imports, we must consider whether in the end the advantages gained by increased duties will actually show a profitable balance. Between the Webb Act, legalizing combinations for export business and the so-called Edge Act the American business man and financier has every facility for selling goods abroad, even to impoverished buyers; so the foreign market is provided for if American business only will cultivate it.

"But, I would repeat, arbitrary legislation accomplishing only artificial results will prove hurtful rather than helpful. We must have practical, business-like legislation, not theoretical, visionary legislation, prompted by sentimental and emotional theorists who mean well but are misled."

TREGO OPPOSES SALES TAX

A PHRASE frequently heard from every branch of industry during the days when the 1918 revenue law was being enacted was this: "Industry has no desire to escape its just share of taxation"—but nevertheless there is no industry which wishes to be unfairly taxed. The 1921 tax revision, which will be undertaken by Congress at this session, is of more than unusual interest. Numerous proposals are being made by those making a study of the subject, among them the sales tax. There has been no suggestion made which has received greater condemnation or heartier commendation than this suggestion. J. H. TREGO, executive secretary of the National Association of Credit Men, says:

"We have heard advocates of the sales tax say that spending and not saving should be taxed. Let us look a while and see whether this is a real common sense and fair statement. Inordinate spending and inordinate saving are equally bad. One is prodigal and the other is miserly. Thrift is just as much common sense applied to spending as prudence applied to saving. The ideas are interrelated. A certain portion of a man's income must be spent. As incomes increase, the proportion spent decreases and the proportion of spending is largest with the laboring and middle classes.

"If spending is necessary, if common sense spending is important to the commerce and industries of a people, why should spending rather than saving be taxed? It is not a fair proposition in our opinion, and when you consider a man with a large family who must spend more than the man with a smaller family to impose a tax on sales is inequitable and unfair. Simplicity is the chief charm of the tax on sales, but simplicity in taxation always spells inequality. Equality in taxation can only be conserved by some complexity in its plans.

"Why isn't it proper to tax individual incomes rather than to place the burden on either savings or spending? Should not every citizen contribute according to his abilities, granting proper exemptions to those on whom even a slight tax will be very burdensome? It seems strange to us that so many good men have been gripped by the idea of a sales tax, especially a turnover tax, when on a careful analysis such a tax would be very unequal, in its application and prove in years just as burdensome and uneconomic as the excess profits tax."

HOW TO PREVENT A COAL SHORTAGE NEXT WINTER

CHAMBERS OF COMMERCE, railroads and economists from various walks of life are greatly concerned over the prospect of another serious coal famine. Various remedies are discussed, but there is one possible remedy upon which all agree, namely, the storage of adequate supplies while stocks are plentiful and weather is favorable. The traffic commissioner of the St. Louis Chamber of Commerce is quoted in the *America Coal Journal* (New York) as follows:

"It is imperative that the public be awakened to the coal situation and the danger of a shortage and that every effort be made to prevent it by stimulating an early movement of coal in large volume. If the railroads can secure a heavy coal movement during the next few weeks or even months in order to relieve them of a burden at a later time when the resumption of business may tax their equipment and facilities it will not only be to their advantage, but it will also be to the advantage of the householder and the business man.

"We are in such close proximity to the source of supply of bituminous coal that we are prone to overlook the necessity for providing against coal emergencies. This tendency has on more than one occasion found us less prepared to withstand adverse conditions than communities more remote from the coal fields. A very large percent of the 8,000,000 tons of bituminous coal consumed in the St. Louis-East St. Louis district is produced within a radius of approximately thirty miles of St. Louis. This includes substantially 2,000,000 consumed by the railroads.

"The quality of this coal, however, is such that it cannot be stored for any great length of time in the open, nor can it be stored safely in large quantities under cover unless unusual ventilation is provided. Nevertheless, from information which has come to me, through numerous conferences which we have held on this subject from time to time in the past, I am convinced that much more coal can be stored here than is customary."

A communication received by the St. Louis traffic bureau from C. H. Markham, president of the Illinois Central, and quoted in the same publication, expresses the railroads' view of the seriousness of the situation:

"It is earnestly to be hoped that coal dealers and consumers have not forgotten the lessons taught by coal shortages of recent years, particularly the one of 1920. These shortages were produced largely by dealers and consumers themselves in not beginning to buy and store coal in adequate volume until late in the year. It is clear that unless coal dealers and consumers profit by the lessons of the past and begin at once to lay in necessary fall and winter supplies another coal shortage will be brought about.

"The coal carrying equipment of the railways is sufficient to handle a large evenly balanced coal tonnage, but it is inadequate to handle the coal movement when the bulk of it is thrown upon the railways in a comparatively short period after midsummer.

"Coal mine operators are now in a position to produce and the railways are in a position to move a large volume of coal. If dealers and consumers fail to take advantage of the present opportunity to lay in fall and winter supplies and another coal shortage eventuates the public in fairness certainly will not attach blame to the coal operators and the railways. More than 255,000 open top cars are now standing idle on the side tracks of the railways. Nearly one-half of the open top equipment of the Illinois Central system is idle.

"The situation, as we visualize it, is that the country is headed for a serious coal shortage unless consumers immediately start moving coal in large volume. We are emerging from the business depression. Within a few months the railways may be taxed to their capacity in handling traffic other than coal."

PRESIDENT REITERATES VIEWS

PRESIDENT HARDING again reiterated his famous statement "Less government in business and more business in government," at the meeting of the Columbia Bankers' Association on April 27. In part he says:

"I believe the government should put an end to interference with righteous, legitimate business. I believe that it should cease to be a competitor of business which ought to be in the hands of private enterprises. I bring you the assurance that a sane and sober America still believes in sane and sober financial methods. It is useless to think of going ahead until America returns to sane and normal financial methods. No nation can succeed along any lines of endeavor unless that nation is committed to a sane financial policy and to the righteous discharge of its obligations. I don't believe the government or its institutilons can be run by mere theorist who neve- accomplished anything for themselves."

GEO. OTIS SMITH ON COAL

COAL is in the limelight. That "Something will be done about it" is obvious. DR. GEO. OTIS SMITH, Director of the U. S. Geological Survey, tells us "Why:"

"The federal government is looking into the coal bins of the country. The part that coal plays in our present-day life needs little men'ion before any audience. We have all learned that this fuel is what makes our modern world go round. Coal is the shortest word we have to express industrial power and domestic comfort. The dependence of the country's industry upon its supply of coal will be even greater in the future than in the past, for coal-generated mechanical power is coming more and more to strengthen the arm of the American workman.

"When you term the coal business an essential business you admit an obligation. Lawyers may discuss whether or not coal is charged with a public use and whether or not there is any constitutional basis for the protection of the public interest in coal, but you know and I know that every agency and agent employed in the production, transportation, and distribution of coal owes something to the public, and that something is coal—coal of the quality needed and in the quantity needed, and where and when it is needed.

"The obvious cause of the fluctuation in mine operation is the fluctuation in demand, and the obvious remedy is storage near the point of consumption of enough of the output to make the demand upon the mines and the railroads fairly constant. Storage by the consumer, however, must be made profitable to him as an individual as well as beneficial to the general public.

"More and stronger associations in our industrial world are needed if we are to make progress, and indeed our law-makers will act wisely if they consider some constructive amendments to our laws that will permit a larger freedom in co-operating where co-operating is not in restraint of trade."

WHAT A LAWYER THINKS OF OHIO'S BLUE SKY LAWS

NO PUBLICATION has been more aggressive in fighting freak blue sky laws than has *Northwest Mining Truth* (Spokane). This paper reproduces from the *Ohio Law Reporter* excerpts from an address delivered before the Cleveland Bar Association by Robert Inglis, as follows:

"The first reading of our Blue Sky law obliterates the intellect like an anaesthetic. As it is re-read from time to time we get a glimmer of meaning here and there, but I think it safe to say that most of us remain in a twilight zone of bewilderment, groping our way with the aid of blanks and private rulings from the Commissioner. Specifically our confusion is the result of the form the law has taken. It is a welter of exceptions and definitions. The outstanding words are 'dealer' and 'securities,' but both are like figures seen in curved mirrors, swollen in one dimension to an impossible broadness, and contracted in another out of all recognition. Thus the term 'dealer' includes corporations issuing stock to its own members, and the word 'securities' means, apparently, everything in the nature of an investment except that which is secure. The stock of the Texas Oil Company is, but a government bond is not, a security The statute reals like a piece of the dictionary gone mad.

"The Governor did not attempt to lay down a panacea or ascribe a definite program, but threw out the suggestion that it might be a good idea to put teeth into the law. There is a monster in the museum called the Tyrranosaurus. It was entirely useless and very much in the way. From the remains we see in the museum we gather that it was principally composed of teeth. What the Tyrranosaurus needed was not teeth, but brains."

The editor of *Northwest Mining Truth* follows the above quotation with this comment of his own:

"We should be intensely interested in Mr. Inglis' opinion of the laws drawn by the Seattle investment bankers and doughty Senator Renwick. In them he might unearth an Assinosaurus, a monster of false teeth and no brains that roamed around, useless and pestiferous, interfering in the affairs of all the other monsters of primeval times."

ZINC OUTPUT, 1918-1920

RECOVERABLE zinc content of ore shipped last year was 38,000 tons greater than that of the year preceding and 37,000 tons less than that of 1918. Geological Survey calculations published during May are as follows:

U. S. Mine Production of Zinc, 1918-1920.
(In short tons)

	Recoverable zinc content of ore shipped		
	1918	1919	1920
Arkansas......	951	189	329
Arizona.......	1,135	859	700
California.....	2,781	236	550
Colorado......	44,567	25,723	25,000
Idaho.........	22,581	7,997	14,000
Kentucky.....	315	36	9
Kansas.......	30,197	47,636	61,069
Oklahoma.....	161,401	178,410	219,188
S. W. Missouri.	55,918	31,468	24,422
Central & S. E. Missouri....	74	72	19
Montana......	104,629	84,382	102,000
Nevada.......	8,362	4,502	4,500
NewHampshire	14	....	....
New Jersey....	98,470	92,912	77,371
New Mexico...	12,025	3,797	5,300
New York.....	3,776	5,120	5,654
Tennessee.....	21,071	23,747	19,217
Utah.........	9,200	2,216	3,000
Virginia	951	....	....
Washington...	19	....	204
Wisconsin...	50,014	40,765	27,286
Illinois......	3,792	6,788	4,720
Total.....	632,243	556,855	595,000

BUREAU OF MINES TO GET SURPLUS ARMY TRUCKS

THE HOUSE on motion of Representative Bland, Indiana, adopted an amendment to the Army Appropriation Bill directing the Secretary of War within thirty days from the approval of the Army Bill by the President to transfer to the Interior Department six serviceable light motor trucks for use of the Bureau of Mines at experiment and mine rescue stations. It was said that the Bureau had been trying for four months to secure surplus trucks from the army but without success. It had endeavored to purchase trucks at surplus sales at New Albany, Ind., and in New Jersey, but the trucks were unserviceable. Mr. Bland and other members insisted that it was better to turn these trucks over to other government departments than to allow them to deteriorate and to be sold as old scrap iron.

When Representative Greene suggested that the War Department should be given credit for the trucks transferred to the Interior Department, Mr. Bland opposed on the ground that it would require an appropriation for the Bureau of Mines to cover such trucks, adding "Congress has never been very lavish n its appropriations for the Bureau of Mines."

SEASONABLE COAL RATES

GOVERNMENT INTERFERENCE is a bad thing, but it would be less evil than usual if its effects were to overcome the seasonable demand for coal, in the opinion of the *American Coal Journal* (New York). This publication makes the following pointed remarks about the two Frelinghuysen bills:

"If the government is really desirous of doing something to help the coal business, or, rather, if those members of one or another branch of the government who seem to consider it their bounden duty to take what some persons regard as an undue interest in the industry are really sincere in their expressed desire to assist, the best thing they can do, aside from standing on the sidelines and, as suggested in the foregoing remarks, letting the industry work out its own salvation, is to evolve some means of overcoming the scandal of the seasonable demand, as Mr. Hoover calls it.

"Whether this can best be accomplished by the enactment of legislation providing for seasonal freight rates is a question on which the trade as a whole, is not in perfect accord. The plan has its strong advocates and equally strong opponents.

"In an effort to work out a solution of the problem, Senator Frelinghuysen of New Jersey, has evolved two seasonal rate bills. One was introduced last year and the other this year. Neither meets the situation, the one being regarded as unfavorable to the East, while the other is held to be detrimental to the interests of Western operators.

"If a seasonal rate bill is to be enacted, surely it should be possible for some of those best minds we have heard about, to evolve regulations which would be fair to all sections. The subject is a large one and not a matter for hasty legislation. We have had too much of that."

PERSONALS

A. H. JARMAN has returned to his home in California, called there by the sudden death of his father. He is expected to return to Washington shortly.

E. G. CURTIS, representing the barytes industry, spent several days in Washington during the month.

JOHN C. HOWARD, director of the American Mining Congress, was in Washington during the early part of May, en route from New York to Salt Lake City.

L. D. NEWMAN has returned to his home in Minneapolis, after spending several weeks in Washington.

ARTHUR K. MITCHELL of the St. Joe Lead Company was a caller at the offices of the Mining Congress May 7.

T. O. MCGRATH, the chairman of the Mine Accounting Sub-Committee of the Standardization Division of the American Mining Congress, spent several days in Washington going over committee matters and looking after tax questions for his company. He has returned to his home at Bisbee, Arizona.

R. C. ALLEN of the Lake Superior Iron Ore Association was a caller at the offices of the Mining Congress on May 10.

DR. VAN H. MANNING of the American Petroleum Institute, was in Washington on May 17.

MARK REQUA of the Sinclair Oil Company was a caller at the offices of the MINING CONGRESS JOURNAL on May 18.

A. B. CONKLIN of Ashland, Alabama, is spending some time in Washington on matters pertaining to the graphite industry.

A. CRESSY MORRISON, Secretary of the National Acetylene Association, was a frequent visitor in Washington during May.

CHARLES W. POTTS, who has been spending considerable time in Washington in regard to war minerals relief matters and a tariff on manganese, has returned to his home at Deerwood, Minnesota.

J. C. DICK, formerly chief of the Mineral Resources Division of the United States Internal Revenue Bureau, now of Salt Lake City, was in Washington recently.

W. P. NETHERTON of San Francisco, California, is in Washington in regard to matters before the War Minerals Relief Commission.

J. H. HOLMES, JR., of Boulder, Colorado, has returned to his home after a trip to New York and Washington.

H. P. BAKER of the New Idria Quicksilver Company spent several days at the headquarters of the Mining Congress during the month.

GEORGE HOLMES, author of "Holmes on Income Tax," was a caller at the Tax Division of the American Mining Congress during the month.

A. V. DAVIS, president of the Aluminum Company of America, spent some time in Washington during the month.

NELSON FRANKLIN of Denver, Colorado, is at the New Willard Hotel.

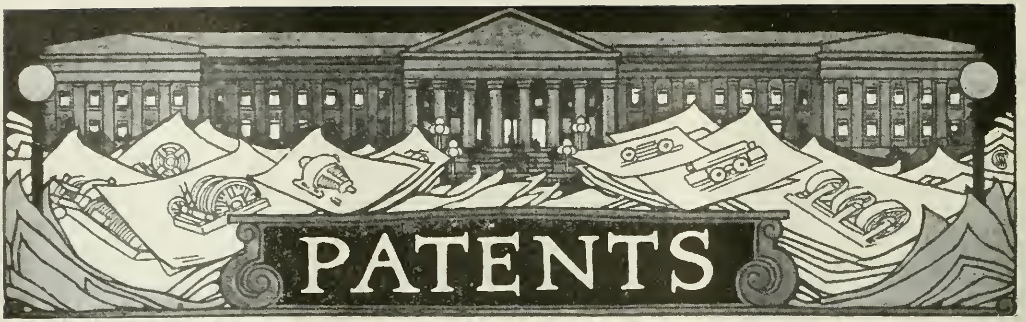
CHARLES A. MITKE, chairman of the Metal Branch of the Standardization Division of the American Mining Congress, was a caller at the offices of the organization en route to Cambridge, Massachusetts, where he will deliver a series of lectures at Boston-Technical Institute.

DETECTION OF PLATINUM

HIGH PLATINUM PRICES, stimulating prospectors to greater activity, have caused the Bureau of Mines to issue a technical paper on "The Detection and Estimation of Platinum in Ores," prepared by C. W. Davis.

Prospectors have secured a great many assays from inexperienced assayers, Mr. Davis points out, and, as might have been expected, these assays were of no value. Some of them, he thinks, were intentional attempts to deceive. Mr. Davis denies the correctness of the statement made by some companies organized for recovering platinum that certain forms of platinum cannot be removed except by special methods. He holds that the opinion of reliable chemists expressed in assaying platinum bearing metals shows that such reports are unconfirmed and should be regarded with suspicion.

The Golden station of the Bureau of Mines has carried on the bureau's platinum work. Experts there take the ground that it is not an easy task to decide upon the proper method for assaying ores containing small amounts of platinum. The paper prepared by Mr. Davis summarizes methods for the detection of the metal and gives a selective method for the commercial estimation of platinum in ores.



CONDUCTED BY JOHN BOYLE, JR.

1,374,447—*W. E. Greenawalt*, Denver, Colorado, Apr. 12, 1921.

FLOTATION APPARATUS for separation of minerals from their gangue by introducing a gas into the liquid and atomizing it therein. The gas is brought into a fine state of subdivision by means of rapidly rotating perforated discs in its ascent to the liquid, and the atomized gas rising to the surface, effectively floats the mineral particles.

1,374,472—*W. W. Richardson*, London, England, Apr. 12, 1921.

CLASSIFYING AND CONCENTRATING MINERALS. An important feature of the invention consists in an improved method of supporting and rotating the trommel which permits the degree of inclination of the trommel to be easily and quickly altered if necessary to suit the material under treatment while a further feature of the invention consists in providing the inner periphery of the trommel with a series of riffle plates arranged in sections, each section being formed on its inner face with a series of graduated longitudinal grooves and ridges designed to offer a greater resistance to excessive wear. These ridges and grooves are intersected by a series of transverse grooves and ridges, some of which extend at right angles while others are arranged at an obtuse angle to the longitudinal grooves, in order to obtain a more effective concentration and separation of the material under treatment.

1,374,478—*P. J. Stanton*, Lundale, W. Va., Apr. 12, 1921.

SELF OPERATING MINE DOOR FOR LOCOMOTIVES, in which guard members are mounted on opposite sides of the doors for engagement by a locomotive to force the said doors to swing to open position and means to resiliently retain said doors in closed position.

1,374,499 and 1,374,500—*W. E. Greenawalt*, Denver, Colorado, Apr. 12, 1921.

FLOTATION APPARATUS.

1,374,525—*J. D. Pugh*, Harrisburg, Pa., Apr. 12, 1921.

COAL MINING MACHINE. The principal object of the invention is to provide a machine in which a flexible cutter in the form of an elongated loop is supported and driven from one end only, leaving the other end of the loop free and unsupported except through the cutter from the driven end thereof. The arrangement of a cutter in this form makes it possible, by tilting the cutter loop slightly, to cut a sharp V-shaped slot into a coal bank, which is very desirable in mining coal. Another object of the invention is to provide means such as an exhaust fan for removing dust from the slot cut by the machine to a point away from the machine where it will not disturb the miner. The invention also contemplates providing a pump on the machine by means of which water may be delivered to the cutter to lubricate and cool it, and to the slot in which the cutter works to keep down the dust and flow it out.

1,374,547—*N. K. Bowman*, Canton, Ohio, Apr. 12, 921.

AUTOMATIC MINE DOOR formed of companion leaves coupled to swing simultaneously in opposite directions, a crank arm connected to one of said leaves, a spring connected to the crank arm to hold the door closed and means for varying the leverage of the spring.

1,374,590—*N. D. Levin*, Columbus, Ohio, Apr. 12, 1921. Assigned to Jeffrey Manufacturing Co.

DRILLING MACHINE, such as is commonly used in coal and other mines, supplied with supporting devices associated with a transporting truck whereby the drill may be conveniently transported from one working place to another and may be quickly and conveniently positioned for operation in any desired relation to the material to be drilled with a minimum expenditure of effort.

1,375,105—*J. H. D. Petersen*, Chicago, Ill., Apr. 19, 1921. Assigned to Link-Belt Company.

APPARATUS FOR HANDLING AND STORING COAL or the like, particularly at the mine head or the sizing plant, or receiving and distribution point, and for storing it or a portion of it adjacent thereto and returning it to the distribution point when desired. At a coal distribution plant there is an unequal accumulation of material due to seasonal demands. Thus, there may be in the winter a very considerable accumulation of coal not suitable for the winter trade but suitable for the summer trade and this coal must either be treated so as to be fit for the season in which it is produced or be stored. An object of this invention is to provide convenient means whereby that storage may be effected by a given apparatus which can then when desired be reversed in its operation to return such storage coal or materials to the distribution center.

1,375,211—*D. Cole*, Morenci, Arizona, Apr. 19, 1921. Assigned to Minerals Separation, North American Corporation.

FLOTATION APPARATUS in combination with a grinding mill, the said apparatus having provision for removing, during the frothing operation, over-size material delivered thereto, and means whereby said over-size material may be returned to said mill for re-grinding.

1,375,233—*W. A. Scott*, Chicago, Ill., Apr. 19, 1921. Assigned to Minerals Separation, North American Corporation.

FLOTATION PROCESS comprising introducing a gas into the ore pulp, removing the gas from the mineral carrying bubbles so formed before said bubbles reach the surface of the pulp, and separating the mineral carried by the bubbles from the remainder of the ore.

1,375,638—*C. J. Kienzle*, Columbus, Ohio, Apr. 19, 1921. Assigned to Jeffrey Manufacturing Co.

CUTTING CHAIN FOR COAL MINING MACHINES comprising means for securely holding the renewable cutter bits during the operation of the machine which will permit of expeditious and convenient replacement. The link of the block chain has a transverse aperture in which the bit is movable and a spring pressed member engages notches in the bit.

1,375,957—*B. L. George*, Salt Lake City, Utah, Apr. 26, 1921.

FLOTATION PROCESS which comprises adding to the ore pulp an oil having an organic acid reaction, and a quantity of zinc sulphate.

1,375,988—*C. G. Walker*, Bramwell, W. Va., Apr. 26, 1921.

ATTACHMENT FOR COAL CONVEYERS. In coal conveying machinery, there is always a gap of six or more inches between any two adjacent conveyers and the coal in dropping from the upper conveyer to the lower conveyer is invariably broken into small particles and is not uniformly distributed so that it is deposited onto the lower conveyer exactly as it is generally by the car-load. In this invention these objections are overcome by providing a plurality of flexible members, such as chains or the like, which are connected preferably at regular spaced intervals to the delivery end of the upper conveyer so that they depend from such end and rest on the lower conveyer in a manner to form an inclined plane which spans the gap between the conveyers and over which the coal is caused to pass when leaving the upper conveyer. Because of the flexibility of these members a flexible inclined plane is produced which gives to a limited degree, under the weight of the coal, as it impinges thereupon, so that a cushioning effect is obtained which retards the movement of the coal and thus prevents breakage thereof in passing from one conveyer to the other.

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GOLD AND FOREIGN TRADE

THE GOLD DOLLAR is equivalent to $2.80 in deposit liabilities of the Federal Reserve System, and to about $20 in terms of credit in the entire banking system of the country. The removal of $100,000,000 in gold from the gold reserve now held in the banking system, without reducing the gold reserve ratio, would involve a contraction of credits of about $2,000,000,000. On the same basis, a credit could be extended to Europe in the amount of $2,000,000,000 based on $100,000,000 of free gold in the reserve fund, without altering the present reserve ratio.

Inasmuch as considerable gold is coming into the country from Europe, thereby depleting the gold reserves of European countries, and further depreciating their purchase power by reducing their exchange, it becomes an obligation of the United States as a creditor nation to extend credit to Europe for the purpose of purchasing our raw materials, to the end that a proper trade balance may be maintained. There can be no differentiation made between one dollar in gold acquired from Europe and one dollar of gold newly acquired from the mines of the United States. It must be apparent, however, that gold produced from our mines would in no way affect adversely the purchase power of Europe, while the gold that we are now acquiring from Europe is greatly reducing Europe's purchasing power and retarding our export trade.

As a creditor nation, we must view the situation from an entirely different angle than formerly when we occupied a position as a debtor nation. We have, by reducing the gold reserves of Europe, augmented the gold reserve of the United States, but it must be regarded that we are but the custodians for the reserve, and that the prosperity of our country will depend greatly upon our protecting that reserve from excessive industrial consumption, and by utilizing the same to the best possible advantage in extending further credit to the countries with which we trade. We are, in fact, the international banker, and henceforth we will be forced to assume a broad international financial relationship. Because of this fact the United States must assume the responsibility of maintaining its normal gold production of $100,000,000 in the interests of maintaining that position as a creditor nation. The gold production of the nation has already declined to less than half that amount, and the gold mining industry will be subjected to still greater pressure with continued losses of ore reserves unless immediate action is taken to render the industry profitable.

THE BULLDOG AT THE WELL

THE SUN NEVER SETS on British possessions, but the sons of Britain sit eternally on the lid. And they sit most particularly tight whenever and wherever there exists a possibility of the discovery or exploitation of oil.

During the last decade, while a state of confusion has been the normal state in Mexico, the world has been content to let the United States handle affairs in the rambunctious republic pretty much as it saw fit. But whenever one of the numerous insurrecto chieftains led his followers into an oil field or levied a new petroleum tax, our State Department knew in advance it would receive a protest from Great Britain. Not one crisis affecting oil was ever permitted to pass without Great Britain's reserving for future negotiation all her real or pretended rights.

In response to a Senate resolution, Secretary Hughes reported upon troubles encountered by American oil concerns in Costa Rica. The two American companies engaged there have been beset by numerous decrees, manifestoes and pronouncements, and it is truly remarkable how each obstacle placed in their way has served also as a stepping stone for some British concern.

When the League of Nations sought to distribute among the victorious powers the task of preserving the peace in small and conquered countries, and mandates went begging, Great Britain agreed magnanimously to accept responsibility for the orderly administration of Mesopotamia. It later became known that the Anglo-Persian Company held extensive petroleum concessions in Mesopotamia which had been granted before the war, and that its controlling stock was English owned. It costs considerable money to administer the Mesopotamian mandate, but Great Britain is still making the sacrifice. Dividends of the Anglo-Persian Company have advanced from six percent in 1917 to twenty percent last March.

Americans seeking admission to the Djambi oil fields were told they came too late. But no such statement was made to British investors. The far-sighted and forehanded British government had previously seen to it that they should be taken in on the ground floor.

While the Colombian treaty was being discussed, Secretary Fall announced that American oil developments stood in imminent danger of falling into the hands of British concerns. In South America, as elsewhere, the support and encouragement of the Empire was found squarely behind every British investor.

No criticism attaches to Great Britain for thus protecting the interests of her nationals. Only the highest commendation is in order. This commendation is freely accorded in the United States. But it is one of the unexplainable quirks of American psychology that those who commend all other governments for shaping their foreign policy to support the commercial ventures of their citizens abroad will condemn the American government for doing the same thing. The cardinal plank of their political and economic platform seems to be that the State Department must never do anything calculated to put a dollar in any business concern's treasury, and if, perchance, the concern to be benefited deals in oil, the greater and the more unforgivable the crime. Whenever the Colombian treaty is mentioned, whenever the State Department moves for equal opportunity for Americans, if so much as a derrick can be imagined in the dreamy distance somebody always sounds the accusatory warning, "nigger in the woodpile."

The patriotic, the common-sense course for America and Americans would be to forget for a while the mythical presence of the dark person in the fuel reserve and think earnestly about a very matter of fact reality—the bulldog at the well. In every country in the world where petroleum resources exist, in developed or undeveloped state, there you will find the British bulldog, either with his jaws clamped around a well or looking for an opportunity to take hold. In the rivalry for the world's petroleum supremacy, it is with this determined animal, and not with the fictional African, that we have to deal. The only way to take anything away from a bulldog is to take it away before he arrives. Business acumen and safety-first unite in pointing the wisdom of securing a clear title and, if possible, sequestering the property, before he has the opportunity of claiming possession. These homely principles are worth remembering, for they constitute a most excellent policy for America and Americans to pursue, especially in regard to oil.

INDUSTRIAL STATESMANSHIP

THE PUBLIC, the great third party to all industrial disputes, the party which ultimately bears the major part of the burden of waste caused by strikes and lockouts, still faces its old problem but with growing restiveness.

Its demand for industrial statesmanship on the part of the immediate parties, employers and employes, is becoming more insistent as the burdens of taxation and high freight rates maintain living costs, while lack of market and falling prices for output intensify the contest between profit and loss. The relation between wage levels and living costs is commanding increasing attention.

Thoughtful wage earners are beginning to realize that an unduly high wage scale is a doubtful advantage. First, because increased cost of production requires an enhanced market price, which curtails consumption and leads to curtailed employment. Second, because general high wage levels add to the cost of living, which absorbs at least eighty percent of the workman's total income. Whether fortunately for the country or not, most unfortunately for the individual workman, his earnings above living costs are usually spent for luxuries and amusements. The saving at the high wage level is so little above the possible saving at the low wage level as not to compensate for the loss of steady employment.

At this time it is said that three million five hundred thousand men in the United States are without employment. Many of these are unemployed because they refuse to work at $1.00 per hour, demanding $1.25 per hour or approximately $10 per day. Upon a basis of $5.00 per day, the waste to the nation on account of this unemployment amounts to five billion dollars annually, approximately the cost of running the national government. This loss estimate includes only loss of wages. It does not include the loss of lives, the destruction of property, the bitterness of feeling, and the inefficiency in production resulting from industrial warfare and a lack of the spirit of co-operation and good will. These latter items, if they could be measured in money, would more than equal the direct loss in wages.

It is true that the present ratio of idleness is unusual, but upon this showing it is fair to assume that the waste occasioned by industrial disputes is sufficient to provide for the payment of the entire war debt of the country.

This burden of waste very largely falls upon the great public, upon those who are not parties to the disputes but whose interest is such as to justify a demand for the application of industrial statesmanship to the solution of this fundamental problem.

THE EVIL OF TAX EXEMPT SECURITIES

THE CONTINUED ISSUANCE of tax-exempt securities is a menace to the credit standing of the government, of the states, and of the political subdivisions of the states. It is rapidly tending toward property confiscation, and is materially delaying the industrial progress of the nation. This condition constitutes a national evil unparalleled in the history of the country. The creation of two classes, the wealthy, free from the burdens of taxation, and the workers, who are forced to bear the burden, of which the wealthy are relieved through the purchase of tax-exempt securities, is a violation of social justice which is crystallizing in broad public opposition and discontent as the issuance of tax-exempt securities expands. In the last few years we have seen the personal wealth of the country so rapidly segregated into the tax-free class, that whereas the taxable income of individual taxpayers under the federal income tax law was $992,972,985 in 1916 the amount decreased to $731,372,053 in 1917, and to $392,247,329 in 1918. It is not to be supposed that the actual income of these taxpayers had thus decreased. On the contrary, it is a safe conclusion that they had converted their wealth into tax-free securities so rapidly that at a similar rate of conversion they would be scot-free of all income tax by 1922.

Otto H. Kahn has estimated that $14,425,000,000 of tax-exempt securities have been issued up to January, 1921, of which about half represents the debts of states, cities, school districts and other political sub-divisions, which half represents the obligations of the government. It is estimated that more than $1,000,000,000 of state and municipal tax-free securities were issued in 1920. If these securities are held by the wealthy, whose federal income tax is at the rate of 73 percent, the total annual loss in this one form of tax alone is over $35,000,000, if the interest rate on these bonds averaged 5 percent. Granted that there may have been an apparent saving to the borrowers of ½ of 1 percent per annum, it is pointed out that this saving on $1,000,000,000 in 5 percent bonds is only $250,000 per year, or 0.711 percent of the annual loss in taxes. If the rates of taxation ear not reduced, the loss in federal income tax alone would, for the life of this billion dollars in bonds, represent a loss of $700,000,000, against a total saving in interest of only $5,000,000. On a most conservative basis, the government is now losing annually from $175,000,000 to $200,000,000 on tax-exempt bonds already issued.

The wealthy investor receives as much net return from a 5 percent tax-exempt bond as from a taxable industrial investment paying over 17 percent. Railways, public utilities and other industrials cannot compete on this basis, and are now being deprived of the capital which they need for expansion. This is a serious handicap to the normal progress of industry which should be terminated. The tax-exempt bond has contributed to the depression in the value of Liberty bonds, causing the holders to sustain still further losses upon liquidation. The issuance of tax-exempt securities by the government, state or other political sub-division because of the ease in obtaining funds, encourages public debt, public extravagance and public inefficiency in the expenditure of the funds so raised. Allowed to continue, the issuance of tax-exempt bonds encourages all political units issuing the same to rapidly approach their bonding limit, when the burden of taxation thus created may become so heavy as to force confiscation of the property. As the bonding power of the cities becomes exhausted, the credit becomes impaired. The credit position of the state is impaired when the credit position of any of its political sub-divisions becomes impaired, and the credit position of a state cannot become impaired without also impairing the credit position of the government. All forms of investment should be on an equitable basis of competition, and equality in the assumption of the tax burden by all people should be established. The principles of the Constitution are now being undermined, and must be restored.

THE COLORADO METAL MINING BOARD

THERE IS SOMETHING NEW under the sun. It is the spirit which animates the metal mining operators of Colorado—a spirit which moves them to help themselves, rather than look to the government for all things, and to desire to pay taxes.

With wages, supplies and transportation prohibitively high, taxes burdensome, business gone and prospects for the future discouragingly dismal, the normal, or at least the expected, procedure would have been to call upon Congress to create a commission and make an appropriation. But the Colorado mine owners followed the accustomed practice only to the extent of asking governmental authority for their investigations. They asked the state to appoint a commission, but offered themselves to provide all the members, to do all the work and pay all the expenses. Within a few weeks the Colorado Metal Mining Board was working, without salary and in perfect disregard of the forty-four hour week, and every metal mining operator in the state was voluntarily paying a new tax.

The personnel of the board, to say nothing of the causes and objects of its creation, would indicate the successful outcome of its efforts. Its chairman is an ex-president of the American Mining Congress, its secretary is the secretary of the Colorado Chapter, its other members are members of the Mining Congress—all of them men who have given without hesitation and without limit of their time, their money and their thought to the advancement of the mining industry. The rehabilitation of the metal mining industry of Colorado, left to such men, if humanly possible, is certain of consummation.

But irrespective of the results of the Colorado experiment—and it is an experiment—the principle involved is worthy of national application. If all the reformers, uplifters and remodelers of our social and industrial fabric could only be told that Congress would create no new departments, commissions or boards unless those who asked for them came prepared to do all the work and pay all the expenses, we would have very few new government agencies, but those which were established would do the work and do it promptly and efficiently.

CENTRALIZATION OF GOVERNMENT CONTROL

HUMAN NATURE is alike the world over and in all time has manifested the same tendencies. Those in control of property, place or power are always striving to strengthen their position, while those lacking any of these possessions are striving to attain them. Civilization is based upon the union of those who are intelligent enough to know that some of their natural prerogatives must be surrendered in order to secure the protection of others more important. The world's progress has resulted from the desire of each individual to advance himself and the present day world civilizations are fairly accurate measures of the mass intelligence and aggressiveness of the several peoples.

The United States has made its wonderful strides toward supremacy among world nations under the provisions of a constitution which guarantees life, liberty and the pursuit of happiness to the most humble of its citizens. Notwithstanding its present supremacy among the nations of the world, the United States Government is still an experiment. Its greatness has been predicated upon the highest possible reward to the initiative and effort of each individual, protected in certain rights by the Constitution, and with the least possible interference. Under the general plan of individualism the development of our wonderful natural resources was made possible through a co-operation which permitted large operations through aggregated capital assembled in corporate form. Just to the extent that the individual was permitted freedom of action, to that extent was progress made.

To the fact that those who gained great power through their large business operations to an extent abused their privilege can be traced the counter-movement looking to the centralization of government control. While the desire of governmental authorities to expand their power was a natural tendency at all times, the first great impetus to this grew out of the so-called "conservation movement." Theretofore the public land resources were offered as reward to the pioneer settler who left the comforts of civilized communities to face wild animals and wilder men in the reclamation and civilization of the unreclaimed areas of the nation. The public lands policy upon which world greatness had been predicated was set aside and a plan adopted which anticipated a continuation of federal ownership and the development of these resources under a leasing system by which the central government would remain in control of these vast resources.

The next inroad upon constitutional liberty was the declaration that the federal government was empowered to do all those things which should be done and which the several states had not undertaken. The principle, that the federal government might do any desirable thing which the state had failed to do, was accentuated by the decision of the United States Supreme Court, that even though the central government might have exceeded its constitutional authority a failure of Congress to repudiate this act amounted to a confirmation of the central authority. For many years, it was regarded as the undoubted right of the several states to control intrastate transportation rates. The effort is now being made by the federal government to assume this power and leave the states without control of agencies created under their authority.

The next step is the declaration that coal, being a universal requirement, must necessarily be considered as a matter of interstate control, and a proposal is now under consideration to assume the management and control of the coal business. To find one man, or the few men who may constitute a commission, able to manage the business of several thousand independent operations, each differing from all others in some particular, is surely a difficult task. These operations have heretofore had the benefit of the experiences of several thousand trained men whose lives have been devoted to an understanding of the particular problems in hand. The nation has had one experience with a super-man. Its November verdict by more than seven million majority repudiated the super-man idea in favor of the man who has declared in favor of "More business in government and less government in business."

And what are the reasons which justify an effort at this time to find a super-man who can teach each of the several thousand coal operators how to handle the individual problems of his mine? The alleged reason is that the price of coal has been exorbitant and there have been temporary scarcities of supply. If any item in the whole range of commodities has not responded to the law of supply and demand; if the price of coal has been larger proportionately than the prices of other commodities; if it can be proven that a general disposition exists among coal operators by unfair methods to extract too large a price for their product; if it can be shown that the distribution agencies over which the government has been given control by common consent have at all times so functioned as to distribute the coal; or, if it can be shown that government interference, in coal, as manifested through the Fuel Administration, did result in lower prices than would have prevailed under the competitive system, there might then be some reason for special coal legislation other than the general tendency toward centralization of power in the Federal government.

COAL MINERS GIVEN A CLEAN SLATE

IN A CONFERENCE with Washington newspaper correspondents on June 28, Secretary of Commerce Hoover said the price of bituminous coal at the mines was entirely fair. He further stated that the best method of bringing the coal situation back to normal would be for individual consumers to check up on the costs of their fuel with a view to discovering what percentage is represented in transportation and distribution, and in this manner arriving at a determination whether retail prices are fair.

In one sentence Secretary Hoover knocked the last prop from under the already tottering structure of government meddling in the private business of coal production. He, who has had more actual experience as a government official exercising control over private affairs than any other man the world ever saw, said, in effect, that the law of supply and demand had once again been vindicated and that it had done its perfect work in the coal mining industry.

There is little more to be said on the subject. All existing proposals for regulating, stabilizing or doing anything else to the coal mining industry should straightway be dropped and no additional ones should be brought forth. Consumers may justly protest if they are gouged by railroads or retailers, but the mining industry is no more responsible for what the railroads and the retailers do than the farmers are responsible for what the jobbing houses and the corner grocery stores do or than the owners of timber forests are responsible for what the building contractors or the furniture makers or the paper pulp manufacturers do.

Consumers who follow Mr. Hoover's advice and check up on cost factors which operate after the coal leaves the mines will find that in respect to them also the law of supply and demand has been as effective as it has in respect to any other commodity of common use. If permitted to operate unchecked, it will bring retail coal prices down to normal along with prices of food and clothing and soda water and picture shows—certainly not any later, and possibly sooner. It is as universal as life, as inevitable as death, as inflexible as the law of gravitation, and every interference with it, whether labeled "regulation," "stabilization" or whatnot, whether proposed by a Senator or a Solomon or a league of nations, is foredoomed to failure and disaster.

THE SEASONAL RATE BILL

ONE OF THE GRAVE DANGERS facing the coal industry today is the possibility that deferred buying of coal, accompanied by the necessarily deferred production and distribution thereof, will create a shortage of coal during the next winter season because of the inability of the transportation systems of the country to distribute the winter's supply in the two or three months which will be available.

Assuming that the present shortage of bituminous coal production approximating 4,000,000 tons per week shall continue a few weeks longer, and that thereafter railroad labor trouble shall prevent for several weeks any large distribution of coal and other general commodities, the piled-up tonnage in all lines will be so great as to make its prompt distribution impossible under the present demoralized condition of our transportation systems. If this condition shall prevail, and it is not a remote possibility, it will create an opportunity for speculators to profiteer as was done last year, and the public will be obliged to suffer, either by reason of outrageously high prices for what is available or, what will be still worse, by not being able to obtain at any price a proper supply. Should there be a recurrence of these conditions, the public conscience will blindly revolt against an industry which is unable to function in such a way as to meet the public necessity. Under such circumstances it will be difficult indeed to prevent the enactment by Congress of legislation putting coal absolutely under public control. Already the decision of the Supreme Court of Kansas has declared coal to be charged with a public use. This principle, if enacted into law, will be approved by the courts, and the passage of regulatory law relating to the coal industry will be demanded with such power as to make difficult the defeat of such legislation.

If the public would now purchase its coal, when the mines are idle and the transportation systems are able to deliver, this condition could be avoided. Any line of reasoning which justifies the consumer in hoping for a cheaper price at a later day is a serious danger to the coal industry at this time. It seems certain that the pending seasonable rate bill would not under present conditions serve the purposes for which it is intended. The consumer will not buy coal because of a 50 cents per ton reduction in freight rates during the summer months unless he is assured that the price of coal plus the higher freight rate next winter when he needs the coal will be less than the present price plus the diminished freight rate. In other words, unless the coal industry is in position to stabilize the price of coal and guarantee that the present price is enough less than the price at which coal will certainly be held next winter to justify the purchase of coal in advance of need, the interest upon the money invested, the coast of storage, the waste and deterioration occasioned by the storage—unless the price of coal next winter is guaranteed to be more than enough to cover all these items, then the seasonal rate bill will not be effective.

Until the requirements of the Sherman Law are so modified as to permit the coal industry to control itself, and to definitely decide that coal will be sold at not less than the costs of production, which can be immediately determined, the seasonal rate bill will be of no avail in helping the situation.

A DEPARTMENT OF MINES

A GREAT MANY REASONS may be assigned in favor of, but none can be advanced against, the creation of a Department of Mines to be presided over by a member of the cabinet, the Secretary of Mines, as contemplated in the bill introduced by Senator Samuel D. Nicholson, of Colorado. Among all the measures providing for reorganization and regrouping of government activities, this one stands out as pre-eminently proper and the most timely.

The miners, speaking through their national chamber of commerce known as the American Mining Congress, went on record a decade ago in favor of the establishment of a Department of Mines. During most of the period which has since elapsed they, in common with other business men, devoted their energies to the winning of the war and to reconstruction, allowing their own recommendation to remain in abeyance, but they have never receded from their position. Their recommendation stands today with every reason of economy and efficiency to back it up and with a much larger number of constructive business men behind it than at the time it was first made.

Mining is one of the two great basic industries of the country and decidedly the bigger of the two. It furnishes two-thirds of all railroad tonnage, without which the transportation of the other third would be impossible. Its manufactured products alone pay nearly one-third of all the corporation taxes collected by the government, or seventy-five times as much as incorporated manufacturers of agricultural products. Forty states depend upon it in more or less degree for employment for sizable portions of their population and all states look to it to contribute a hundred thousand times more permanent wealth than all other industries combined. No wisdom can be seen in cluttering up the administration of this, the country's greatest industry, any longer with the administration of hospitals, institutions for the deaf, public buildings and playgrounds in the capital, Indian disputes and governmental affairs in distant Hawaii.

The Interior Department will not suffer either in prestige or in the amount and importance of its work through the loss of its mining bureaus. With the retention of its other existing bureaus and the addition of a score or two-score of independent bodies which by all odds ought to be made directly accountable to one of the executive departments, it will probably expand its influence and its usefulness. The mining industry will appreciate and make the best use of the richly deserved recognition and assistance which the establishment of a Department of Mines will afford, but the country as a whole will be the greatest gainer, for it is only when the mines are prosperous that the nation is prosperous.

Senator Nicholson is to be congratulated. The miners are with him to a man.

RAILROADS AND ECONOMIC LAW

JULIUS KRUTTSCHNITT, chairman of the board of directors of the Southern Pacific Company, told the Senate Interstate Commerce Committee that the railroads had for years been trying to make Congress and other regulating bodies understand that railroads were subject to the same inflexible economic laws to which all industries are subject.

That is just exactly what the country is trying to tell the railroads now. The greatest of all economic laws is the law of supply and demand. If a merchant with a surplus stock sees his trade growing smaller, he stimulates demand by reducing prices. Railroads are business concerns dealing in one commodity, transportation, and their supply of this commodity, as measured by their ability to furnish it, is at the present time much greater than the demand. Inflexible economic law decrees that the railroads must create a demand for their surplus product by cutting freight rates on the necessities of life to a point which the traffic can bear.

There is a maxim of equity as ancient and as honorable as any economic law which the railroads would do well to remember, namely, "He who comes into court must come with clean hands." The railroads have asked for a reduction in wages, but they object strenuously to any suggestion of a reduction in freight rates, notwithstanding the Railroad Labor Board is now preparing to grant their own request. The railroads should practice what they preach. Let them request the Labor Board to reduce all railroad wages to the levels which prevailed prior to the last big boost, and announce at the same time that the last general increase in freight rates will be rescinded on the day the wage reductions go into effect. Then they will have a good case, for they will have on their side not only "inflexible economic law," but also public sentiment, which is both judge and jury.

ABOUT OUR GOVERNMENT

THE UNANIMITY of belief held by thousands of patriotic citizens indicates that if each might have the opportunity to reconstruct our industrial machinery, an ideal condition would be created by which the highest gratification might be brought to each individual and justice automatically prevail. Unfortunately, however, the holder of each of these myriad beliefs proposes that the ideas of all others shall conform to his own rules. As a matter of fact, no two of them could agree upon the essential details. The glory of the American government lies in the fact that it is the means through which the majority may express itself, not upon the definite details, but upon the broad principles involved.

Every organization, as its functions are enlarged and newer agencies created, loses to some extent the efficiency maintained when every detail could be under the direction of one capable executive. Notwithstanding this minor loss of efficiency the great problems of the world have been worked out most effectively by coordinated effort. It is not that the person who inspects the dial of a watch finds that occupation more interesting than would be his work if he had to do with every part in the construction, but it is because a thousand individuals each working on separate parts, uninteresting and monotonous as each of these operations may become, are able to produce several times as many watches as could be done if each undertook to master and execute every detail of watch construction. So it is with reference to our national government. Each individual is called upon to do a certain part, to limit his natural liberties in certain directions, and to adjust himself to that body politic called government to which he owes allegiance and from which he is entitled to protection in "life, liberty and the pursuit of happiness."

For some years past much criticism has been leveled at our national government because of inefficiency and waste; and in the more recent years because of wanton waste and extravagance. No organization without absolutely autocratic power over its membership can so conduct its affairs as not to justify criticism of this kind. The ambition of individuals, the initiative which has made this country the greatest in the world, cannot always keep itself within proper limitations. This is particularly true in our government, where each public servant is tempted to undertake things which ought to be done and which he does not appreciate are more properly within the province of some other governmental agency. Thus duplications of service have developed which, being of public concern, have provoked much more extended criticism than would have resulted from equal waste in the management of a private business enterprise. Each of the many reformers who charges himself with the important responsibility of reconstructing our governmental affairs has a little different view of the remedy, although all agree upon the abuses. In the end we shall all be forced to accept the conclusions reached by Congress after a careful consideration of all of the facts involved and, whether right or wrong in its conclusions, the law which that body is authorized to enact will be respected by the American people.

AMERICAN CAPITAL ABROAD

IT IS STATED authoritatively that investments of English capital in Argentina furnish an annual interest return which more than offsets the immense purchases of foodstuffs and other raw materials by British citizens in the Argentine republic. All the profits derived by English firms through the sale of manufactured articles in the Argentine market constitute pure velvet

Like returns would accrue to American capital invested in sufficient quantity overseas. Advantages of such investments are two-fold. First, they create an assured outlet for American manufactures; second, they produce interest payments which form an effective invisible balance of trade in our favor.

American investments abroad have been made heretofore mainly when necessary to assure a supply of needed raw materials to American factories. Advantageous connections of this character are matters of ordinary occurrence now, notably in the case of certain minerals in South America and oil in every part of the world where freedom from discriminatory treatment is assured. But in most other lines we will have no further need of the world's goods, either raw material or manufactures, until Europe regains its buying power and its ability to absorb our surplus farm and factory output. And that Europe can never do until it is assisted to its feet and propped up with good American money. The soundness of this statement was demonstrated within the last few weeks when President Harding called upon the country's strongest financiers to aid in solving the problem of transferring American gold to impoverished Europe.

No more profitable way of speeding the transfer can be suggested than by sending over part of the money for permanent investment. Irrespective of the work of the new federal financing corporation, and of the result of negotiations for foreign loans to be expended in this country, investments of this character should be made in sufficient volume to serve as essential factors in the further development of outlets for American merchandise. Coal exports last year amounted to a third of a billion dollars and were surpassed in value only by cotton and wheat. Copper ranked twelfth in value among all exports. The mining industry would be one of the first to benefit from wholesale enlargement of American investments abroad.

MINING CONGRESS MEMBER HEADS PUEBLO RELIEF COMMITTEE

William V. Hodges, a member of the American Mining Congress, was apppointed chairman of the committee from the Denver Civic and Commercial Association to raise funds for the relief of Pueblo and adjacent flood stricken territory.

ANNOUNCEMENT

ANNOUNCEMENT is made of the association with the American Mining Congress, Tax Division, of Lieut. McKinley Kriegh, formerly a practicing attorney of Springfield, Missouri, during the war in charge of the map distribution section of General Pershing's headquarters of the A. E. F. in France, and more recently in practice before the Internal Revenue Department. Robt. G. Wilson, chief of the Tax Division, resigned effective July 1.

Mr. Kriegh is well equipped for the services required, and will be able to render substantial service in a general super-advisory capacity to the members of the Mining Congress who have difficulty in straightening out their tax affairs. The Mining Congress, through Mr. Kriegh, will hope to continue its very sympathetic relations with the Subdivision of Natural Resources of the Internal Revenue Bureau, and to carry out the purposes of the Mining Congress to act as general adviser in protecting the interests of the public and the taxpayer, by the accomplishment of just settlements in all federal income tax matters.

BRISK DEMAND FOR EXPOSITION SPACE

THE NATIONAL EXPOSITION of Mines and Mining Equipment to be held in conjunction with the twenty-fourth annual convention of the American Mining Congress at the Coliseum in Chicago, October 17–22, is attracting national attention among the large manufacturers of mining equipment machinery.

There has been an unusual demand for exhibit space on the part of the manufacturing concerns, in fact, during the period of one week following the first announcement relative to the contract forms and rules and regulations governing exhibits, contracts for twenty-five exhibit spaces were closed, and among the representative firms securing exhibit space were the Westinghouse Electric and Manufacturing Company, the Jeffrey Company, the Lincoln Steel and Forge Company, the Southern Wheel Company, the Lima Locomotive Works, the Ohio Brass Company, the James H. Channon Manufacturing Company and a number of other equally representative concerns.

In spite of the size of the Coliseum and the annex, the management of the convention and exposition are beginning to feel that they will be crowded to take proper care of those desiring exhibit space.

Among the important public exhibits will be a special exhibit of the Bureau of Mines, illustrating oil shale development in the west, and special exhibits from the Geological Survey and Bureau of Standards, furnishing material relative to the work of the government bureaus.

One of the features of this exposition will be a splendid exhibit of the mineral resources and opportunities for the development of mining enterprises in the territory of Alaska. Mexico will be represented by a fine government exhibit, illustrating the remarkable mineral resources of that country and presenting scenic features which will be one of the really attractive sections of the exposition. In addition, tentative arrangement has been made for state exhibits from California, Wyoming, Arizona, and a number of the other western mining states.

OIL STANDARDIZATION MEETING.—The Technical Committee on Standardization of Petroleum Specifications will hold an open meeting at the Bureau of Mines, Washington, June 12, to consider suggested modifications of Bulletin 5, governing government purchases of oils.

THE BUREAU OF INTERNAL REVENUE GOES INTO HIGH SPEED

When David H. Blair assumed the office of Commissioner of Internal Revenue, he announced that he hoped to bring the work of the bureau up to date and to keep it there. And when a few days later he selected Edward H. Batson as Deputy Commissioner in charge of the Income Tax Unit, tax experts in Washington agreed he had made considerable progress in that direction.

In the selfsame inaugural interview the Commissioner expressed the view that "it is important to all that pending differences, both as to income taxes and estate taxes, be speedily and finally determined. I hope for great results in these particulars."

Mining operators with claims for depletion and amortization, or possibly for refunds, and others whose ideas as to the amount of income or excess profits taxes they should pay, or the amount of the refund to which they were entitled, differed from those maintained by the revenue department, agreed with him heartily that all pending differences should be settled, and settled speedily and finally. And they may take comfort from the fact that Mr. Batson, as disclosed in an interview with the Mining Congress Journal, agrees with them and with the Commissioner, and that his chief ambition, expressed in so many words, is to bring about a speedy and prompt settlement of these pending differences.

EDWARD H. BATSON
Deputy Commissioner of Internal Revenue in charge of Income Tax Unit.

Not only does the new Deputy Commissioner desire to settle pending differences, but he hopes, and expects, to bring about a general speeding up of the business of assessing and collecting federal income and excess profits taxes all along the line. That he is capable of tightening up the gears and throwing the department into high speed will be admitted by all who know anything about the man and his official accomplishments. Speed and accuracy are seen in his every move, individually, and in his career as a whole—otherwise, how could he himself have traveled so far in such a short space of time?

For be it known that the man who hereafter will be directly responsible for collecting ninety percent of all the receipts of the biggest government in the world is only thirty-two years of age, one of the youngest men on record to attain to such a responsible and exacting position. All his life he has done things with the "speed" and "finality" which he and the Commissioner and the taxpayers agree should mark all revenue department operations. Born in Caldwell County, Missouri, he graduated from high school in 1907, studied law in Kansas City for the next three years and was admitted to the bar when he was twenty-one years old, which is early enough. For eight years he practiced law in Kansas City, specializing during the last three and a half on railroad litigation. He entered the government service, February 19, 1918, as claims examiner and was assigned to the claims division of the income tax unit; was promoted to the position of claims reviewer a month later, and in October of the same year was made executive assistant. On April 8, 1920, he was made head of the staff division of the Income Tax Unit, and on November 1 was made assistant head of the unit, and on March 1 of this year became acting Deputy Commissioner of Internal Revenue in charge of the Income Tax Unit. It was only natural that he should be selected as Deputy Commissioner, which he was, and all of which is strictly in keeping with the aforementioned attributes of "speed" and "finality" which are manifest in everything he does.

If his individual history can be taken as a criterion, the troubled taxpayer may reasonably feel encouraged that his tax problems will be settled promptly and properly. Nothing said by the Commissioner or the Deputy Commissioner, and nothing written in this article, should be construed as a reflection upon the accomplishments of the Bureau of Internal Revenue during the last few years. The former Commissioner and the former Deputy Commissioner and the former chiefs of the Natural Resources Subdivision did the best they could with the men and the money at their command. Commissioner Blair himself said it was a great tribute to his predecessors that they had accomplished with so little friction the gigantic task of collecting five or six billion dollars a year, especially since the task was thrust upon them suddenly, when they had no precedents to guide them and were without any machinery except that which they built up as they went along. To this tribute the taxpaying public will unreservedly subscribe.

Scores of reasons for the delay in effecting tax settlements could be advanced, but they may all be summed up accurately in these two, namely, lack of sufficient personnel in the bureau and failure of taxpayers to co-operate. Some taxpayers may resent the statement that they have not co-operated, but upon reflection they will see that they did fail to co-operate, although they were willing, even anxious, to do so. But whether attributable to indifference, inability or inadvertence, every lack of co-operation on the part of the taxpayers brought about a delay in the process of effecting "speedy" and "final" tax settlements for which the revenue bureau was in no way responsible. This point will be discussed more fully a little later in this article.

Perhaps the chief cause of dissatisfaction on the part of taxpayers has been the impossibility of effecting speedy and final disposition of claims for refund and abatement. Many taxpayers have come to believe that the revenue bureau gives all its attention to collecting money, and cares not at all whether claims for refund from the government are ever disposed of. This is what Mr. Batson had to say to the Mining Congress Journal for their encouragement:

"It is my principal ambition to bring about a prompt settlement of the claims for refund and abatement which have been filed in thousands of cases and which have not been adjusted as promptly as the taxpayers and the bureau desire. We are working on a reorganization plan whereby claims may be brought up for consideration immediately upon their receipt. I have issued instructions to all of my men that I do not care whether an additional tax of five cents is levied in any given time, if it can be shown to me that the auditors' time has been engaged in the adjudication of claims.

"Often it is charged that the government is more interested in collecting additional tax than in making refunds to taxpayers. This is not true, but the delay which has been caused in handling claims in the last few years has been largely due to the safeguards which the government has found necessary to throw about the claims problem to the end that excessive or duplicate payments may not be made."

In the adjustment of claims, it is necessary to observe many details required by the disbursing departments which do not apply to cases where additional tax is involved. Furthermore, the law prohibits the government from refunding money so long as the taxpayer is indebted to the government in any sum, making it necessary to check and audit the same taxpayer's records for several years before a refund for any given year can be released. For example, the recent community property decisions are bringing into the bureau thousands and thousands of claims which will require the auditing of the returns of husbands and wives from 1916 to the present date.

It will be good news to all who have claims pending to know that for the first time in the last four years, the Income Tax Unit is now adjusting as many claims as are being received, and that ninety percent of all pending claims have been assembled and assigned and are in various stages of adjustment. It is hoped that with the aid of additional space, personnel and equipment it will be possible in a few months to have all claims under active consideration.

ALBERT H. FAY
Chief of the Subdivision of Natural Resources, Income Tax Unit

The situation with respect to the auditing of returns is more favorable at this time than at any time since the organization of the unit, the unaudited cases being largely made up from the intricate, complex cases, principally those involving large companies with numerous subsidiaries. The reason for this situation is largely attributable to the fact that the unit is unable to retain in sufficient numbers men of sufficient calibre and ability to adjust these complex cases. The salaries which the unit is allowed to pay are not sufficient to retain its most capable men, who are naturally unwilling to remain indefinitely in the service for a salary which is in most instances less than fifty percent of those which they might obtain in the commercial world.

Three hundred dollars a month is a princely salary as salaries run in the revenue bureau, although many of the auditors and assessors there match their wits with financial and engineering experts whose yearly honorariums equal those of a Senator and a Congressman combined and a cabinet officer thrown in for good measure. For collecting the government's money and preserving the bureau's morale, Mr. Batson draws down five thousand dollars every twelve months.

Quite recently one hundred and fifty subordinate employes were promoted to the places just given up by men who accepted remunerative offers from the outside commercial world. The government literally conducts a night school for its revenue employes, and it is necessary to do so if the bureau is to continue in operation.

Inadequate appropriations not only make it impossible to keep a permanent force in Washington, but also force the bureau to run along with only nineteen hundred men in its field force. Shortage of field forces causes many difficult cases to drag along almost indefinitely which could be settled promptly if investigations could only be made. And right in this connection it should be noted that numerous observers believe the government could make a clean, round billion dollars net by tripling this field force. Taxpayers will come, or send, to Washington, if their assessments are too high, but they will not trouble themselves if assessments are too low. Facts and figures warranting the collection of additional taxes are nearly always discovered in the field. A sufficient field force, it has been estimated, could collect one billion dollars which the government otherwise will never receive, and the aggregate of salaries and expenses for thirty-eight hundred new field men would be only seven or ten or fifteen million dollars! There is very little prospect that this appropriation will be made, but hopes run high that something will be done in this direction and that a great deal will be done toward increasing the personnel in Washington.

Many complaints received from taxpayers are traced back to the taxpayer's own delay. For instance, many taxpayers upon receiving notice of additional assessments fail utterly to register their objections until the assessments have been forwarded to the collectors and demand for payment has been made. Then—and there are thousands of such cases—a delay ensues for which the taxpayer alone is responsible. When a taxpayer waits this long to make objection he is informed that under the law he must submit a claim for abatement covering the disputed items, which items might have been eliminated earlier had the taxpayer immediately upon receiving notice of the assessment intimated to the department the existence of facts which warranted a change in the assessment.

"Assessments are never made till thirty days after the taxpayer has been notified of the department's intention to assess," Mr. Batson said. "The taxpayer is at liberty at any time within this thirty days to submit any competent evidence which will eliminate any erroneous portion of the tax. If, however, he fails to exercise this privilege and the tax is formally assessed, then it becomes necessary for him to submit his contentions in the form of abatement claims and file with the collector. These claims are then forwarded to Washington for consideration upon their merits, and if it is found that the tax has been erroneously assessed the collectors are authorized to remove the charge.

"Much of the delay in connection with the closing of cases is due to the fact that the taxpayer, after having his books examined by the revenue agent and after having been notified that the recommendation is to be made for the assessment of additional tax, makes no effort to mobilize his evidence so that it may be presented to the bureau at Washington immediately upon receipt of the assessment letter."

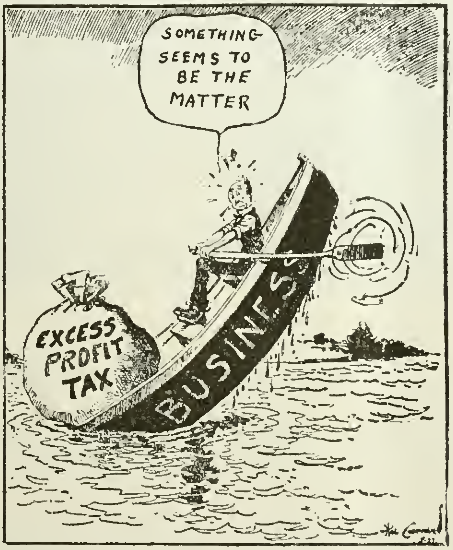
If the excess profits tax is renewed for the calendar year 1921, the bureau expects to have the audit of priority returns in fairly correct condition by the end of the fiscal year, June 30, 1922.

With respect to natural resources cases, arrangements are being made to notify each taxpayer of the valuation placed upon his property before the case is referred to the audit section. This will afford the taxpayer engaged in the mining industry an opportunity to have his valuation settled before the case is finally closed. It is thought that such procedure will be more acceptable to the taxpayer, since the principal difficulty in these cases is that of determining correct valuation.

Men in full sympathy with the determination of Mr. Blair and Mr. Batson to put speed and finality into the revenue bureau have been chosen as responsible heads of departments, and in no instance is this statement exemplified more strongly than in the selection of Mr. Batson's assistant and in the choice of a new head for the Natural Resources subdivision. E. W. Chatterton has been made assistant deputy commissioner and Albert H. Fay chief of the Natural Resources Subdivision.

Mr. Chatterton entered the government service May 21, 1897, as a page in the office of the fourth assistant postmaster general. He was made secretary to the chief post-office inspector in 1902. On April 1, 1912, he was appointed chief clerk and assistant to the general superintendent of the railway mail service, serving as executive officer and also as personnel officer. He was commissioned a captain in the reserve corps on January 5, 1917, and on April 30 was ordered to active duty. Shortly before his return to America in April, 1919, he was promoted to the rank of major. He was appointed assistant head of the administrative division of the Income Tax Unit in August, 1919, and on February 5, 1920, was made assistant head of the field audit section. From this position he was promoted to the post of assistant to the Deputy Commissioner.

In dealing with Mr. Fay the mining industry will be dealing with a man of long mining experience and with a full understanding of the difficulties of operators. Mr. Fay graduated from the Missouri School of Mines in 1902, and received his A.M. degree from Columbia in 1907, where he specialized in post-graduate studies in geology, mineralogy and ore dressing. Later as assistant to the late Dr. R. W. Raymond, then secretary of the American Institute of Mining Engineers, he received valuable editorial training. Before entering college he worked in the commercial department of Arizona copper mines, and after he became a mining engineer he did important work and gained much experience in Mexico and Alaska. He has traveled across Alaska fifteen hundred miles by dog-sled, and in the spring of 1914, as a representative of the United States Bureau of Mines, supervised the shipment of the first cargo of coal from the Matanuska field. He has worked in barite mining and barium chloride manufacturing in Tennessee and was on the staff of the *Engineering and Mining Journal.* From 1911 to 1920, while with the U. S. Bureau of Mines, he compiled and edited thirty-five technical papers and became the author of Bulletin 35, "A Glossary of the Mining and Mineral Industry," which contains thirty thousand definitions for more than twenty thousand terms. Mr. Fay comes from New England ancestry dating back to the early colonial days, and his own native state is Missouri. He entered the National Resources Subdivision June 28, 1920, as valuation engineer, oil and gas section. He was appointed acting chief of the subdivision on the tenth of last month, and becomes chief July 1, when the resignation of C. F. Powell goes into effect.



A LOAD THAT OUGHT TO BE LIFTED, NOT SHIFTED
—Int. Feature Service, Inc., In Baltimore Sun

Of such experience and character and determination are the men who direct the Internal Revenue Bureau as a whole and that particular part of it with which the mining industry comes in contact. As to the men directly under Mr. Fay in the Natural Resources Subdivision, Mr. Fay himself says of them:

"It is the aim of every engineer and auditor to treat the taxpayer as though he were a human being."

The Internal Revenue Bureau has stepped on the gas and opened the throttle. With competency and consideration on the part of the bureau, and co-operation on the part of the taxpayer, every indication points to a safe arrival at their mutual destination, namely, the just settlement of income and excess profits cases with "speed" and "finality."

NATIONAL TAX ASSOCIATION TO MEET AT BRETTON WOODS

NOTICE has been received by the Tax Division of the American Mining Congress that the fourteenth annual conference of the National Tax Association will be held at Bretton Woods, New Hampshire, September 12–16. It is planned to hold sessions only twice daily, so that those participating may have ample leisure to enjoy the air and scenery of the White Mountains. The invitation was extended by Governor Brown and the New Hampshire Tax Commission.

RESCUE TEAM SAVING THE LIFE OF A COMRADE
Team is equipped with the most modern scientific apparatus such as will be worn by contestants at St. Louis

MINE SAFETY TEAMS PREPARING FOR INTERNATIONAL CONTESTS

THE SIXTH ANNUAL International First Aid and Mine Rescue meet will be held in the Coliseum at St. Louis on September 1, 2 and 3, under auspices of the United States Bureau of Mines, in co-operation with the National Safety Council, the American Red Cross, United Mine Workers, the coal operators' associations and St. Louis civic organizations.

Team entry blanks have been forwarded to all of the mining companies in the United States and a number which are operating in Mexico and Canada. Acknowledgments already received by the Bureau of Mines indicate that virtually every mining district in the United States will be represented by one or more teams. Eighty-five teams were entered in the annual meeting held last year in Denver and it is expected that this number will be increased to 100 at this year's meeting. Entries will close on August 17 at the Pittsburgh station of the Bureau of Mines.

Official invitations have also been extended by the State Department on behalf of the Department of the Interior to the governments of Great Britain, France, Belgium and the Dominion of Canada to be represented by one or more officials in a series of conferences on the possibilities of standardizing the use of mine rescue breathing apparatus. These conferences, it is expected, will occupy a prominent place in the events of the meeting.

Exhibits of apparatus and accessories for use in mine rescue and recovery work will be made by various manufacturers and their agents and the Bureau of Mines will also display some of the devices which have been developed in the Bureau laboratories for use in mine rescue work.

Another feature of the meet will be the formal presentation of gold medals to miners for deeds of bravery in saving life in the United States during the past year. The awards will be made by H. Foster Bain, Director of the Bureau of Mines, in behalf of the Joseph A. Holmes Safety Association of which he is also president. This association was formed in 1916 to perpetuate the work and memory of Dr. Joseph A. Holmes, the first director of the Bureau of Mines, whose life was devoted to obtaining better mining conditions and more friendly and cooperative relations between the operators and miners. Heroes of four mine disasters, or their survivors, have been selected to receive the gold medal and diploma of honor for saving, or dying while trying to save, the lives of their fellow workers.

A gallery is being erected in the Coliseum for use in the mine rescue contests. Under conditions approximating as closely as possible those found in mines following an explosion or fire, mine rescue teams, wearing oxygen breathing apparatus, will enter the gallery and rescue a miner who has been, supposedly, entombed following the explosion. Each team will be composed of five men, one of whom shall act as captain. Each man will be provided with an oxygen breathing apparatus and such lamp as is used by rescue crews in coal or metal mines and each crew will carry a canary bird or other recognized carbon monoxide detector. Judges will rigidly examine the apparatus of each crew and discount for any improper adjustments or connections. These judges will also examine the members of the crew as to their knowledge of the proper operation, testing and construction of the apparatus.

BUTTE (MONTANA) FIRST AID TEAM IN ACTION

In which the boys from the copper mines are seen taking a prize for life-saving methods in an American championship meet

Following this examination, a mine rescue problem will be assigned to each team. Among the practice mine rescue problems of the Bureau of Mines, some of which will be used at the St. Louis meeting, are the following:

(1) A quantity of dynamite accidentally set on fire and burned 100 feet from face of tunnel; two men are working at the face of the tunnel and have erected a barricade for their protection; men are able to walk; crew will enter and rescue the two men.

(2) Carbon dioxide gas (black damp) has suddenly appeared; a miner at the working face is overcome; lights on the gangway have been extinguished; crew will enter and bring miner to the surface.

(3) Following a mine fire, the crew finds a stopping across the entry; tear hole in stopping and rescue miner who is found unable to walk.

First aid teams will be composed of six men, including a captain and a patient. Each team will be given an equal number of first aid problems upon which they will be judged for various defects in their work, failure to do the important thing first, awkward handling of the patient and other improper forms of treatment.

Prizes of cups, medals and banners, together with other trophies, will be awarded the winning teams. Tentative plans have been made to announce the winners and award the prizes at a banquet on the evening of September 3 as the closing event of the meeting.

Although the contests will be held under auspices of the Bureau of Mines, expenses of the meeting will be met from a sum of $4,000 which has been pledged by L. G. Lumaghi, president of the 5th and 9th districts of the Illinois Coal Operators Associations.

DANGERS OF BURNING MINE SIMULATED

Competing teams will go into the smoke and deadly gas and bring a stricken workman out into the open air

Mr. Lumaghi has been named general chairman of the executive committee in charge of arrangements for the meeting, with J. J. Rutledge, superintendent of the Central experiment station of the Bureau of Mines, Urbana, Ill., as vice-chairman; Carl Smith, manager of the Safety First Council, St. Louis, as secretary, and W. K. Kavanaugh, president of the Southern Coke and Coal Co., as chairman of the program arrangements committee with W. G. Jenkins, Philip J. Stremmel and Clarence Howard serving as members of his committee.

Other members of the executive committee are Charles F. Hatfield, secretary and general-manager of the St. Louis

Convention, Publicity and Tourist Bureau; P. H. Byrns, St. Louis chapter of the American Red Cross; Eugene McAuliffe, president of the Union Colliery Co.; Francis E. Turin, Dr. Royd R. Sayers, chief surgeon of the Bureau of Mines; Girard C. Warnum, manager of the St. Louis Safety Supply Co.; D. J. Parker, mine safety engineer of the Bureau of Mines; Walter Nesbit, secretary-treasurer of the United Mine Workers, District No. 12; C. A. Herbert, district mining engineer of the Bureau of Mines; George Heppel, secretary-treasurer of the United Mine Workers, District No. 25; W. D. Ryan, safety commissioner of the Bureau of Mines; W. S. Bedal, chairman of the American Legion city executive committee of St. Louis; Walter M. Smith; Paul V. Dunn, general secretary of the St. Louis Chamber of Commerce; Bert Barnett, Dr. R. Vitt and F. J. Bailey, assistant to the director of the Bureau of Mines.

A number of local contests have already been held in various mining states and communities and these will be continued in other districts, the winning crews to be sent to the St. Louis meet to compete with the winning teams from other localities.

The miners' occupation being continuously filled with hazard, the rescue and first-aid teams at the mines are looked up to as the leaders in a great cause and there is much local and regional pride in the proficiency of their men. In sending crews to the International meet, the mining companies are not guided entirely by the hopes of winning prizes for efficiency, but feel that the men sent will bring back with them a larger experience in mine rescue work obtained from their contact with the chosen crews from other mining districts.

COKE-OVEN ACCIDENTS IN 1920

IN ALL coke ovens operated in the United States in 1920, there were forty-nine fatalities and 3,415 cases of injury, according to Bureau of Mines reports. This was a reduction of four fatalities and 616 injuries as compared with the record of the year preceding. There were employed 28,139 persons, each employe averaging 319 working days.

At by-product ovens, where there were employed 17,184 men, or 1,176 more than in 1919, the number of killed was thirty-eight and the number injured was 2,380. The fatality rate was 1.92 and the injury rate 120.04 per thousand of employes as compared with 2.55 and 158.33, respectively, in 1919. These averages are equated to a basis of 300 working days.

Beehive coke ovens employed 10,955, or 2,378 less than during the year preceding. There were eleven fatal and 1,035 lesser accidents. The rate was 1.09 killed and 102.54 injured per thousand employes as compared with .92 killed and 125.96 injured during the preceding twelve months. Employes of beehive ovens averaged 276 working days.

WHY ACCIDENT STATISTICS ARE NEARLY ALWAYS LATE

Questionnaires were sent by registered mail early last month to less than one hundred metal mines and quarries, metallurgical plants and coke ovens which have not yet reported to the Bureau of Mines the number of men employed and the number killed and injured last year. Until these questionnaires are filled out it will be impossible for the bureau to compile and make public its annual accident statistics.

The questionnaires are always mailed promptly about December 31 to all the metal mines and quarries, metallurgical plants and coke ovens in the United States—between fifteen and twenty thousand in number. A majority of all plants make prompt return. Upon the expiration of a month, a second questionnaire is sent to those who have not filled out the first one. A third set of questions is mailed out in April and a fourth in March, and in June registered letters are sent to the few who are still delinquent.

The delay of the few in sending in reports is responsible for the lateness which marks the issuance of statistics by the Bureau of Mines. As a rule, these statistics are not issued until twelve or fourteen months after the expiration of the year. If reports came in promptly, the bureau could make full announcement within ninety days after the close of the year.

The suggestion has been made that the bureau issue partial returns from time to time. This suggestion cannot be followed because statistics of accidents and fatalities are issued for each state. While one plant, even a fairly large one, might have little effect on statistics for the nation, its accidents and fatalities have a very perceptible effect on the figures for the state in which it is located. And since the statistics for the nation must include those for all the states, it can be readily seen that the bureau must refrain from making tables for any state until full returns are in or until it is known that the missing reports will never come in.

During the last two weeks some of the questionnaires sent out last December have come in with the notation, "not in business last year." The bureau's statisticians would have been greatly relieved, and their work facilitated, if the operators had sent this notification last January. The entire mining industry would benefit if the few plants which are in the habit of waiting until they receive four or five requests would adopt the policy of filling out their questionnaires immediately upon the closing of their books at the end of the year.

Even with the delay mentioned, the bureau expects to get out its accident statistics for 1920 three or four months earlier than usual.

COAL FATALITY RATE INCREASES

ACCORDING to reports from the various state mine inspectors, 127 men were killed during March, 1921, in and about the coal mines of the United States, as compared with 181 in March, 1920, the decrease being 54 fatalities, or about 30 percent. For the same months, the output of coal fell from 54,689,000 tons to 37,432,000 tons, a decrease of 17,-347,000 tons, or 32 percent. Based upon the production for March of last years, 3.31 lives were lost for each million tons of coal produced; for March, 1921, the corresponding fatality rate was 3.40 per million tons mined.

The largest number of fatalities occurring in any state was in Pennsylvania, where there were 47 fatal accidents in the anthracite field and 8 on the bituminous districts. There were 17 fatalities in West Virginia; 10 in Illinois; 10 in Ohio; 9 in Alabama; and 7 in Kentucky.

The average number of lives lost during March of each year from 1913 to 1920 has been 209. The production of coal has averaged 49,324,125 tons, showing a fatality rate of 4.24 per million tons as representative of the month of March for the last eight years.

THE GOLD MINING SITUATION

By F. Albert Morrison
Member of the American Mining Congress

A VERY ABLE STATESMAN once said, "The country that controls gold, rules the world," and it is conceded that the commercial control of the world's gold supply is held by Great Britain and the United States, not so much because of their federal gold reserves but because of their gold production. Great Britain and its possessions produce 70% of the whole world's annual output, which is appproximately $340,000,000, while the United States, including the Philippine Islands, is only producing about 14% of this amount.

The total production in 1915 was close to $469,000,000. Note the drop in production in the period between 1915 and 1920.

The United States and Great Britain are also the principal consumers of gold. Statistics from the Bureau of the Mint are that in 1918 more than 40% of the domestic output of new gold was used in arts and industries and the United States probably consumes more gold for these purposes than any other country. The Director of the Mint reports that in 1919 the United States used gold in manufacturing and for other industrial purposes to the value of $75,000,000, which was fifteen millions more than its own total production for that year, while the 1920 production dropped down to the $49,000,000 mark and the consumption in arts and industries still further increased.


F. ALBERT MORRISON

This data is not mere guess work but is taken from the latest reports of the Bureau of the Mint and the United States Geological Survey.

We are daily reading of the immense quantities of gold being shipped into the United States in payment of foreign trade obligations. The United States Federal gold reserve is now close to $3,250,000,000 while our 1920 gold production was some $52,000,000 less than in 1915. Real prosperity has little to do with the amount of gold coin piled up in the government vaults. What must be done to insure the future value of our American dollar? We will have to get back to pre-war conditions and our former gold production because the time may come when we in turn must uphold the standard of our money. Today the United States needs no credit; nevertheless, reversed conditions would change this. A country's credit is somewhat based on its natural resources but its gold is the source with which its money standard is backed. Professor O. M. W. Sprague, of Harvard University, has pointed out how a country's credit may be estimated. He says: "Every pound of gold a country holds in reserve establishes a ratio of credit seven times that amount."

When foreign exchange returns to its normal state, and it is bound to happen in due time, our present heavy gold imports will immediately change to gold exports. Those who have studied the gold question in the United States have come to the conclusion that we must increase our production if we are to meet the situation, as above mentioned, and to do this some relief for the gold producer must be forthcoming from some source. With the passing of the revised McFadden Gold Bill now pending in Congress the United States' gold producers will find themselves able to assist in keeping up the country's credit by producing more gold to offset the decrease of foreign imported gold, which is bound to happen when foreign exchange becomes normal.

Abraham Lincoln's message to the miners in the West at the conclusion of the Civil War, and just a few hours before his death, was: "Now that the rebellion is overthrown, and we know pretty nearly the amount of our national debt, the more gold and silver we mine we make the payment of that debt so much easier. I shall promote their interests (the miners') to the utmost of my ability; because their prosperity is the prosperity of the nation, and we shall prove, in a very few years, that we are indeed the treasury of the world."

If the present Congress has a sufficient number of members with some of Lincoln's wisdom and foresight we can expect relief for the miners in the very near future. Considering this a possibility the future of gold mining offers exceptional opportunities.

The fostering of gold mining is of especial importance to California, Arizona and Nevada, but as Mr. W. J. Loring, president of the American Mining Congress, points out, little is known by the new generation of Californians, or our eastern friends, except superficially, of the important part that gold mining played in the upbuilding of the Golden State and it appears to him that an industry that produced such enormous wealth should be stimulated in every possible way.

The total gold production in California since its discovery in 1848 amounts to the enormous sum of $1,720,496,203. In 1848 California's production was $245,301; in 1849, $10,151,360; in 1851, $75,938,232; in 1852, $81,274,700, and from 1852 to 1920 production gradually fell off until it got down to $13,950,000 in the latter year, while the state's past records show that it should have been around $20,000,000.

Arizona kept up a more favorable production of gold during the War and right across the border of California the little camp of Oatman, Arizona, produced $3,001,492 in 1920. There are only ten gold dividend payers in the United States and two of them, the United Eastern and Tom Reed, are located at Oatman and with the passing of the McFadden Bill the original Gold Roads mine in this camp will in all probability become another dividender, not to mention hundreds of other properties possessed of enormous tonnage of low grade ores that cannot be produced at a profit under the present day conditions and are now standing stagnant throughout the West.

THE GOLD STANDARD

Editor's Note.—The following statement is from the Monthly Bulletin of the National City Bank, June, 1921. George E. Roberts, vice-president of the National City Bank, served for fourteen years as director of the United States mint.

THE WORLD came to the gold standard by a process of evolution and elimination, the countries one by one adopting it in order to facilitate commerce with each other and to secure the greatest possible stability of values. The United States finally sealed its adherence to the gold standard by the act of Congress approved March 14, 1900, which declares that "the dollar consisting of 25.8 grains of gold nine-tenths fine, shall be the standard unit of value of the United States, and all forms of money issued or coined by the United States shall be maintained at a parity of value with this standard, and it shall be the duty of the Secretary of the Treasury to maintain such parity."

There has been no modification of this declaration. The pledge stands. The Liberty Bonds are payable in dollars as described in that quotation.

Nominally the United States is on a gold basis, for its money of all forms is maintained at a parity with the gold dollar, but it is not true that 25.8 grains of gold, nine-tenths fine, is the standard unit to which prices and property values are now related. The fact is that at the level of wages and prices now prevailing gold cannot be produced at the rate of 25.8 grains, nine-tenths fine, to the dollar. *Gold production is unprofitable and rapidly declining. The gold standard cannot be permanently maintained without gold production, and in the long run wages and prices must return to the established standard or the standard will have to be changed by reducing the number of grains in the dollar, which would be a deliberate and unjustifiable act of repudiation.*

It is the evident duty of the banking authorities of the country to be guided by the law of the land, and to follow a policy which in the long run will keep the country on a gold basis, with the word "dollar" wherever used having the significance of 25.8 grains of gold, nine-tenths fine. That does not signify a drastic policy, but it means a consistent policy which eventually will give that result, and the business men who talk about stabilizing values at some theoretical level which has no relation to the gold standard probably have not considered the fundamental facts of the situation. The level of prices is not an abstraction; if prices are to have any stability they must be related to some standard of value. The great bulk of the primary products of the country are now selling practically upon the gold standard level. That is the level to which general prices will naturally tend as industry gets back into a normal state of productivity over the world. There would have been less jar and interruption of industry, and losses would have been less severe, if the descent to the gold standard level could have been accomplished more gradually, but since the great body of our products are there, the logical policy for leaders in all branches of industry is to bring prices and costs into harmony with the prices of food stuffs and raw materials.

SPRY MAKES INSPECTION TRIP.—Commissioner William Spry of the General Land Office left Washington June 15 on a western inspection trip, accompanied by his secretary, B. W. McLaughlin, and John D. Yelverton, chief of the field service. He held a three-day conference in Denver beginning June 18 and one in Salt Lake City June 22, each conference being with field men in charge of different territories. His object was to get acquainted with the field men and secure their ideas about the work of the General Land Office.

CALIFORNIA MINING LEGISLATION

(By Robert I. Kerr, Secretary, California Chapter, American Mining Congress)

PRACTICALLY no legislation detrimental to the mining industry was passed by the forty-fourth session of the California legislature. Considerable proposed legislation having for its purpose the regulation of the oil industry was introduced, but all of it was defeated.

Several so-called "efficiency and economy bills," consolidating a great many of the state commissions, were passed and approved by the governor. The principal effect of these bills upon the mining industry will be a material reduction in the number of inspectors and inspections authorized under the present law.

Resolutions memorializing Congress to pass the McFadden Bill and to protect the quicksilver industry by appropriate tariff legislation received almost unanimous endorsement. The well known "Collar to Collar" bill was not introduced.

Senate Bills Nos. 259 and 308, introduced at the request of the Industrial Accident Commission, proposing drastic amendments to the Workmen's Compensation, Insurance and Safety Act and providing for the regulation and inspection of electrical equipment, were defeated and tabled by the Judiciary Committee of the Senate after a hearing ably presented by both the opponents and proponents of the measures. Several amendments to the penal code relating to the protection of labor engaged in the construction, alteration and repair of buildings and structures, and rules relative to the inspection of elevators therein, introduced at the request of the said commission, were passed and approved by the governor.

Assembly Bill No. 1300 introduced by Schmidt of San Francisco at the request of the Boilermakers' unions, providing for the repeal of the boiler inspection act, approved May 9, 1917, passed both houses and was approved by the governor on June 3.

Amendments to the Workmen's Compensation Act, proposed by organized labor, eliminating the waiting period, increasing the weekly benefits and compelling all employers of labor to carry insurance with the State Compensation Insurance Fund, were not reported out by the committees to which they were referred.

Senate Bills No. 10 by Boggs, providing for a mining and metallurgical laboratory at Berkeley, and No. 821 by Ingram providing for a fund for making an economic report on the gold resources of California, were not reported out by the Senate Committee on Finance.

Proposed legislation, providing for industrial peace and arbitration in case of strikes, for a universal eight hour work day and for the licensing of persons operating steam boilers and engines, was not considered.

Assembly Bill No. 782 by Beal, reserving to the state all mineral and mineral deposits in state lands, and providing for their disposition only upon a rental or royalty basis, passed both houses and was approved by the governor on May 25. This is a measure introduced at the request of the Surveyor-General and provides for the disposition of state mineral lands on a 1/16 royalty basis under a plan similar to the Federal Mineral Land Leasing Act.

Assembly Bill No. 1102 by Lewis, providing for an appropriation of $30,000.00 to be used in the construction of restraining dams for impounding tailings from mining operations, etc., provided a like appropriation be made by the federal government, passed and was signed by the governor May 26.

OPTIMISM PREVAILS AMONG NEW MEXICO MINING MEN

(Correspondence by Burton Bunch, Secretary of New Mexico Chapter.)

ALTHOUGH the closing of the mines in New Mexico came just at the time when the New Mexico Chapter, American Mining Congress, was getting nicely under way, the resultant depression did not cause a suspension of effort and support. The chapter is little more than six months old and had not yet enlisted the assistance of all mine companies and individuals possible to obtain as members of the state body. Headquarters are maintained in Silver City; in the county in which the state's biggest concerns are operating, so that an agreement entered into last October with the Grant County Chamber of Commerce, which is well supported by the large mining companies, enabled the Chapter to continue its functioning without halt. Since the mining business is the leading industry of Grant County, it seemed fitting that the secretary of one organization should serve as secretary of the other.

Except for a watch on developments of interest to the industry, such as proposed legislation for the suspension of mine assessment work and similar other legislation, there has been little activity in the office. At the same time, however, mining men of the state are generally optimistic, and are making ventures based on their certainty that conditions affecting all mining will return to normal. One of the most striking of such ventures, perhaps, is the re-opening of the old Volcano Silver Mine near Stein's Pass, Hidalgo County, near the Arizona line. It has proven within the last few weeks, according to report, to be virtually a bonanza like those which brought hundreds of people to the southwestern part of the state in the eighties.

The Volcano mine was closed in 1900, after about $100,000 in silver had been taken out. Recently C. W. Mitchell, T. C. McSherry and others of Silver City found that the original workings nad missed the true vein from two to twelve feet. Developments since that time have verified the early assumption that a great body of silver had been discovered where earlier workers had prepared the way for a cheap way of extracting it, by the sinking of shafts and the running of drifts. The vein upon which the Volcano is located is thirty-five feet wide and can be traced for several miles. Present operators have control of 9,000 feet along this vein.

The ore now being shipped comes from a point on the 100-foot level, about 200 feet from the shaft. The ore has been entered for a distance of about sixteen feet, and the other wall of the vein has not been reached. For a width of ten feet the ore shows silver chloride and bromides with considerable horn silver. The owners believe they have an ore body so extensive that millions of tons of ore which can be handled profitably will be developed.

RADIUM BEARING TORBERNITE.—Attention has been directed recently to the radium bearing torbernite ore found in large quantities at White Signal, Grant County, near Silver City, by the presentation of quantities of the ore to Mme. Curie by Senator Bursum of New Mexico as a representative of the owners of the property. The ore was turned over to the Smithsonian Institute for shipment to Paris, but the specimens were so interesting that the curators of that institution have requested that specimens be sent to Washington for exhibit. Although the torbernite will run a gram of radium to 600 tons, according to claims, no satisfactory method of reduction has been developed. The ore is now being used by a sanitorium company in charging water with radioactive rays for medicinal purposes.

NEW MEXICO BUSINESS BRIEFS.—The Gagan Mines Company, of which J. J. de Praslin is president, was recently incorporated in Santa Fe, with a capitalization of $3,000,000, of which $982,580 has been issued. The company is successor to the United Sulphur & Development Co., and will have headquarters in Albuquerque.—A revival of mining in the Red River district of Taos county has been reported. It is said that twenty men were recently added to the force in the Caribel Mine, and that the mill on this property has been completed. The Jayhawk group nearby is being reopened by the same company for development.—Recent development on properties of the San Rafael Mining Company near Raton are said to have shown marked improvement in the ore bodies. Announcement has been made by J. F. Garcia, secretary, that the mines will resume operations immediately.—The Ruth lead-silver mine in the Lordsburg district has been optioned to Frank G. Kaerwer, of El Paso, Texas.—Reorganization of the Octo Mining Company, with properties in the Lordsburg District, has been announced. The new name will be The Anita Copper Co. Indebtedness of the old company has been liquidated. The new organization is prepared to reopen the mines, according to report.—The enlarged mill of the Co-operative Mining Company, Lordsburg District, was recently opened for a test run of twenty-four hours. The extraction was 91.50 per cent, which exceeded the expectation of the builders.—A recent assay of gold ore from a property at Gold Hill, ear Lordsburg, Hidalgo County, returned 336.82 ounces.

ARIZONA OPPOSES OIL TARIFF AND FREIGHT DISCRIMINATION

(By J. E. Curry, Secretary Arizona Chapter, American Mining Congress.)

OPPOSITION to the levying of a tariff upon Mexican oil, and to freight rate reductions from Pacific terminals east but without including Arizona points, was expressed in resolutions adopted by the Arizona Chapter of the American Mining Congress at a meeting in Bisbee June 15. The resolutions follow:

Duty on Petroleum

WHEREAS: Officials of the United States Government have repeatedly warned the American people that fuel oil and other petroleum products are vital to the navy, and to the shipping and manufacturing industries of the United States, and that the domestic reserves of petroleum are being so rapidly depleted that for the safety of the country it is necessary for American companies to secure control of foreign oil properties and

WHEREAS: At present the Secretary of State is carrying on negotiations with foreign countries to allow American companies to obtain concessions in foreign oil fields, in order that domestic reserves of oil may be conserved, and

WHEREAS: Large quantities of petroleum are now being imported into the United States from Mexico and from other countries, thereby to some extent relieving the oil fields of the United States from excessively rapid depletion, and

WHEREAS: The present disorganized condition of the oil industry in the United States is merely the result of the temporary curtailment and readjustment in other industries, and is in no way due to a production of petroleum which would exceed the demand in normal times, and

WHEREAS: If a high import duty is placed on crude oil, when a general revival of business comes there will be a great scarcity of petroleum and its products in the United States, resulting in famine prices even higher than those which prevailed during 1919 and 1920, and in a very rapid depletion of the petroleum reserves of the nation, and

WHEREAS: In particular the mining industry of Arizona depends in a large degree on regular and guaranteed shipments of fuel oil from Mexico at a moderate price, as was shown by the fact that in the fall of 1920 most American producers of fuel oil refused to make or renew contracts for the delivery of fuel oil at any price, and by the fact that at that time the Standard Oil Company of California publicly urged its former customers to replace oil burning apparatus by coal burning apparatus, which would entail a much greater cost for power.

THEREFORE BE IT RESOLVED by the Arizona Chapter of the American Mining Congress, on this 14th day of June, 1921, that the imposition of an import duty on crude oil is contrary to the best interests of the United States; and

BE IT FURTHER RESOLVED that a copy of these resolutions be sent to the Senators and Congressmen from Arizona, to the Governor of Arizona, and to the National Secretary of the American Mining Congress, with the urgent request that they use all possible means to prevent the imposition of such a duty.

Freight Rates

WHEREAS: The Transcontinental Railroads have announced their intention to apply to the Interstate Commerce Commission for permission to establish reduced rates to the Pacific Coast terminals without reductions to points within the State of Arizona,

AND WHEREAS: The people of Arizona are dependent upon eastern manufacturers for articles of commerce, machinery, implements, etc., necessary for the development of our mines and farms, and many wholesale merchants have established themselves in Arizona for the purpose of distributing these manufactured products,

AND WHEREAS: Just and reasonable freight rates are vitally necessary for the transportation of these products as well as for the products of our mines and farms and livestock, and the proposed rates will militate against all developments in our state and entails serious losses upon those who have invested large sums of money in its development,

AND WHEREAS: No such prejudicial rates are imposed on any other section of the United States except in that territory known as the Inter-mountain country, which includes Arizona,

AND WHEREAS: Under the act to regulate commerce, we are entitled to rates that are just, reasonable, non-discriminatory and non-prejudicial,

BE IT RESOLVED: That we oppose the establishment of the rates proposed by the railroads and we protest to the Interstate Commerce Commission, our representatives at Washington, and other governing bodies, to the end that just and reasonable rates be established for all sections of the United States, and preferential rates to none.

Col. John C. Greenway, general manager of the Calumet and Arizona Mining Company and the New Cornelia Copper Company, made an address in which he pointed out the advantages which would accrue to Arizona from the construction of a railroad outlet to the Gulf of California.

"There is a great field for the copper mining industry in Arizona by securing an outlet on the Gulf of California," he said. "This can be accomplished by the extension of 102 miles of track to a point that can be made suitable for the purpose by the construction of a breakwater and pier. This would be an extension of the little road from Gila Bend to Ajo, and from there to the Gulf. The route is easy, and the construction would be comparatively inexpensive."

Colonel Greenway expressed his belief that at the time the Gadsden Purchase was made an outlet for Arizona on the Gulf was purposely blocked by California, which desired to handle commerce of all the western states through her ports. Arizona copper companies could save $6,000,000 annually by shipping over such a route as he proposed.

"The freight situation with regard to bullion," he said, "is this: In 1907 the rate from Douglas to Brooklyn was $8.55, and the present rate is $20. The rialroads expect to make a reduction to $16.50 and say that they cannot reduce further. I accept the fact that they cannot reduce further, and believe that this road to the gulf would be great for the copper producers of Arizona."

FIVE-METAL PRODUCTION OF FOUR WESTERN STATES

THE SECOND advance report on the five-metal production for Montana, Idaho, Utah and Washington during 1920 has been issued by the U. S. Geological Survey. The figures, which, in the main, are similar to those issued in the first report earlier in the year, are as follows:

MONTANA

	1919	1920
No. of producers	457	457
Ore treated (short tons)	4,183,594	5,241,615
Gold (ounces)	107,856	89,550
Silver (ounces)	12,541,181	12,579,178
Copper (pounds)	169,981,288	177,059,260
Lead (pounds)	34,437,764	31,253,916
Zinc (pounds)	168,763,823	184,337,786
Total value	$62,037,191	$65,573,047

IDAHO

	1919	1920
No. of producers	210	163
Ore treated (tons)	1,457,395	1,958,401
Gold (ounces)	34,502	23,490
Silver (ounces)	5,579,056	7,326,794
Copper (pounds)	3,122,763	2,538,396
Lead (pounds)	182,341,898	249,609,976
Zinc (pounds)	15,994,229	27,932,326
Total value	$18,374,315	$31,170,176

UTAH

	1919	1920
No. of producers	179	165
Ore treated (tons)	6,745,423	6,800,180
Gold (ounces)	104,464	97,454
Silver (ounces)	11,649,961	13,106,976
Copper (pounds)	124,061,807	116,931,238
Lead (pounds)	123,829,051	140,838,113
Zinc (pounds)	4,431,024	8,157,739
Total value	$45,169,328	$49,744,334

WASHINGTON

	1919	1920
No. of producers	49	44
Ore treated (tons)	100,879	85,318
Gold (ounces)	12,232	5,846
Silver (ounces)	259,384	199,678
Copper (pounds)	1,676,576	1,983,134
Lead (pounds)	2,146,157	5,787,247
Zinc (pounds)		426,296
Total value	$968,961	$1,200,932

VETERAN WESTERN MINER DIES

W. S. McCORNICK, veteran financier and business man of the west, died at Salt Lake City May 18, after a gallant but unsuccessful effort to recover from an illness which necessitated an operation two weeks p eviously.

Mr. McCornick was one of the largest factors in the development of mining in Utah. He was essentially a builder, and to his personal participation and the abundant financial resources he commanded may be attributed the success of many mining enterprises of the state. He was active in other lines, including banking, merchandising, live stock and railroads, but his intimates always knew that the mining industry was closest to hi n.

Mr. McCornich was a native of Canada and was in his eighty-fourth year. He went to California as a youth and subsequently to Nevada, where he participated in the interesting activities of early-day mining in that state. He founded the banking house of McCornick & Company in Salt Lake City in 1873, and the institution soon became and remained the largest in the state. Following his death, the business was taken over by Walker Brothers, bankers, of Salt Lake, as Mr. McCornick's heirs wished to retire from the banking business.

HALF-BILLION DOLLAR BURDEN PROPOSED FOR THE MINES

MINE OWNERS WOULD PAY nearly half a billion dollars yearly into the federal treasury under the terms of H. R. 6,773, introduced early last month by Representative Oscar E. Keller, of Minnesota. The bill levies an excise tax upon the privilege of the use and enjoyment of land holdings based upon their unimproved value. The tax would be one percent upon all value in excess of $10,000, and the tax upon approximately half of $108,000,000,000 would be paid by the so-called "natural monopolies," which includes the mines.

Speaking in support of his bill, Representative Keller said that monopoly, rather than agriculture, industry and the processes of production, should bear a special tax burden through the levy upon the privileges of its enjoyment when such monopoly extends to large and valuable tracts of land. For the purpose of the tax, the bill defines land to be "the surface of the ground with all easements in, on and over the same, whether covered by water or not, and including water powers and rights, natural deposits of coal, minerals of all kinds, oils and gases, peats, waters and other substances and not including standing timber or improvements to result in whole or in part of the application of labor to land."

The bill provides that all persons, firms, associations and corporations owning land exceeding $10,000 in value, whether in possession or leased to others, shall be subject to an excise tax upon the privilege of the use and enjoyment of such excess at the rate of one percent. Where land is leased and the value of the lease is in excess of $10,000, such value shall be deducted from consideration in determining the tax to be assessed against the owner and shall be charged against the lessee. In the case of joint or other ownership aside from individual, the various owners shall pay the tax in proportion to their interest. It is proposed to apply the tax to the United States, the Philippines and Porto Rico.

The total worth of land values in the United States, Mr. Keller said, exclusive of agricultural land in actual use, is $108,000,000,000, of which $45,000,000,000 consists of land which has iron, copper, lead, zinc, gold, silver, marble, granite, coal, oil and gas deposits and timber; $12,000,000,000 of franchises, pipelines, stock yards, railroad rights of way, terminal and government land grants; $8,000,000,000 of timber rights and timber lands, and $3,000,000,000 of water power, fishing grounds and harbor and water fronts. The proposed one percent tax on these holdings, after deducting for improvements and allowing for all the instances of the $10,000 exemption, would yield $895,000,000 annually, Mr. Keller said, and the largest part of this tax would be paid by the owners of "natural monopolies," which included mines. Mr. Keller held that owners of natural resources enjoyed special advantages which enabled them to profit more than others, that one-third of the wealth of the nation and one-third of its income bearing properties was included in this classification and that justice demanded that the owners of these privileges pay for the upkeep of the government which protects them in their "monopoly."

Between fifty and sixty billions of dollars of the nation's property consists of vacant city lots, untilled farm lands and undeveloped or unused natural resources, Congressman Keller said, and the imposition of his proposed tax would compel their owners to make them productive, thereby increasing the output of coal and other necessities of life and, through enlarged competition, reducing the cost of living. The lifting of the tax burden from the producer and the consumer and the placing of it upon the owners of unused natural resources would add five billion dollars annually to the nation's volume of trade, as taxes on land values would make it unprofitable to monopolize natural resources and compel their owners to develop them.

Mr. Keller charged that coal, oil, timber, lumber, water power and other natural resources had been monopolized by a comparatively few, saying that of the 16,153,000,000 tons of anthracite coal in Pennsylvania more than forty-four percent was owned by one concern and that 60,000 acres of Connellsville coal was owned by another.

"Not content with taking a reasonable profit as the result of ownership of these natural resources," he continued, "these grasping concerns have the supreme effrontery to participate in a conspiracy to curtail production, as a result of which the public is charged $20 a ton for coal which cost $2.40 at the mines."

The same conditions, he asserted, obtained in respect to the ownership of oil lands, the Standard Oil group owning the bulk of the producing petroleum fields and a score of individual stockholders having amassed from $25,000,000 to $250,000,000 through ruthless exploitation of the privilege which the existing tax system has permitted them to retain. He insisted that like conditions prevailed in respect to iron ore, copper, lead, zinc, silver, salt, potash and fertilizers, in all of which lines the bulk of the natural resources being owned by comparatively few persons who are enabled to oppress labor and exploit the public because the unused property they hold goes practically untaxed.

Lumber, Mr. Keller said, was monopolized to even a greater extent, and water power in a degree even more dangerous than lumber. He concluded with the statement that his bill would compel the owners of these monopolies to develop them in order to pay the taxes, and that increased production would reduce the cost of living.

BRASS, BRONZE AND COPPER IN 1919.—A preliminary census report placed the number of brass, bronze and copper manufacturers in the United States in 1919 at 1,119 and the value of products at $487,707,000. In 1914 there were only 992 establishments with output valued at $162,199,000. Of the 1,119 establishments reported, 213 were located in New York, 125 in Ohio; 122 in Pennsylvania; 88 in Illinois; 80 in Michigan; 75 in Connecticut; 72 in Massachusetts; 67 in New Jersey; 44 in California; 36 in Wisconsin; 31 in Indiana; 21 in Missouri; 20 in Maryland; 18 in Rhode Island; 16 in Washington; 10 in Minnesota; 9 each in Kentucky and Colorado; 7 in Texas; 6 each in Louisiana and New Hampshire; 5 each in Iowa and Maine; 4 each in Alabama, Delaware, Georgia and Oregon; 3 each in Nebraska and West Virginia; 2 each in Montana, Tennessee, Utah and Virginia; 1 each in the District of Columbia, Florida, Kansas, and Vermont. The largest amount of the factory output, $130,736, consisted of castings and machinery fittings. Plates and sheets were valued at $102,898,000. Lamps accounted for $1,559,000 of the total output and hardware for approximately $45,000,000.

STANDARDIZATION CONFERENCE

A MEETING of the General Correlating Committee on Mining Standardization was called by the American Engineering Standards Committee on May 28, at which meeting Charles A. Mitke, chairman of the metal branch of the Standardization Division, and Colonel Warren R. Roberts, chairman of the coal branch of the division, represented the American Mining Congress.

The question of increasing the membership of the committee was discussed. In order to obtain an active working correlating committee for mining standardization limited in membership to those interested in the whole field covered by the committee and at the same time to secure the full co-operation and adequate representation of all organizations dealing with only a part of the work of the committee, it was agreed that the organizations of the country should be divided into two classes according to their interest in the committee's activities, these two groups to be entitled to active and associate membership representation. Organizations entitled to active membership representation on the committee are those national bodies whose whole interest is in mining. National organizations only a part of whose work lies in the mining field are entitled to representation on the committee as associate members, without vote, but to be consulted whenever affairs relating to their parts of the industry are under consideration.

It was voted that the correlating committee for mining standardization form a group of associate members, representative of bodies whose interest is in only a portion of the work of this correlating committee, who can take an active part in the detailed work of the committee without being actively represented in the membership of the correlating committee for mining standardization.

After an informal discussion of the proper function of the correlating committee on mining standardization, it was agreed that it should suggest to the American Engineering Standards Committee subjects for standardization, recommend sponsors, define the scope and limits of a proposed standard, assist in adjusting conflicts or clearing up ambiguities, follow up work under way, and report from time to time upon progress made within its field of activities. It was voted to recommend to the American Engineering Standards Committee that there be organized a sectional committee on "safety rules for installing and using electric equipment in bituminous coal mines"; that there be organized a sectional committee on "portable electric mine lamps." It was also agreed that there should be organized a sectional committee on "storage-battery locomotives for use in gaseous mines"; and that the Bureau of Mines be designated as the sponsor or a joint sponsor for each of the above three sectional committees. Each of the organizations represented on the correlating committee shall be requested to determine without delay whether it desires to become joint sponsor for one or more of these sectional committees, and notify the chairman of the correlating committee.

The desirability of having uniform state laws relating to mining, and the certainty of there being adopted, by the various states, laws in conflict with each other and not in accord with the best interests of the country as a whole, having been discussed, it was agreed that an effort should be made to secure uniform and suitable laws to be enacted by the states.

The chairman requested each member present to give a report of the standardization work being carried on by his organization at the present time.

We summarize below reports which were made verally by the representatives present:

AMERICAN MINING CONGRESS, metal mining: A report has been prepared but not yet published; it is in the press and will soon be issued.

AMERICAN MINING CONGRESS, coal mining: Seven committees have been at work and their reports have been completed. These have been condensed for publication but will not be released until the annual report is issued. At the next meeting of the correlating committee it will be possible to present a complete program of the activities of these committees for the coming year.

NATIONAL SAFETY COUNCIL: For the last six years various committees have been working on reports dealing with first aid and rescue; hoisting ropes, safe process; mining cars. These have been published in the transactions annually, but copies of the individual reports are not available.

BUREAU OF MINES: The bureau has co-operated actively with other interested organizations in issuing publications from time to time based upon the experience of others checked by the laboratories of the bureau. Work is now under way on storage-battery locomotives which eliminates the trolley hazard but introduce troubles of their own; permissible explosives; self contained oxygen breathing apparatus; miscellaneous mine lamps; flame-proof motors for use in gaseous and dusty places; enclosed switches; ladders; and safety catches. These are in various stages of completion, the last-mentioned being in manuscript form.

AMERICAN INSTITUTE of Mining and Metallurgical Engineers: The institute is prohibited by its constitution from engaging in standardization, and hence has no standardization program. However, papers relating to safety and similar subjects are published in the transactions.

THE ASSOCIATED COMPANIES (eight insurance companies): These companies have no definite standardization program. Various rules are laid down concerning the monetary value of certain risks and these tend to improve mine equipment construction and operation. In this way each of the coal mines insured is made to pay for insurance in accordance with its risks which have been more or less "standardized." The work of "standardization" has not progressed so far in metal mining. The companies have already prepared several pamphlets dealing with these subjects, and additional pamphlets are now under consideration.

After the New York meeting, Colonel Roberts spent several days in Washington going over the work of his sub-committees.

DR. AGNEW GIVES IMPRESSIONS OF LONDON CONFERENCE

EUROPEAN STANDARDIZATION methods are similar to those in vogue in the United States, according to Dr. P. G. Agnew, secretary of the American Engineering Standards Committee, who has just returned from the London meeting of secretaries of national standardization bodies. This method consists in submitting questions concerning specific pieces of work to committees representing the technical and the managerial points of view of the particular branch of the national industry concerned. This method applies to specifications, methods of test or dimensional standardization.

The London conference was called by C. le Maistre, secretary of the British Engineering Standards Association, and there were in attendance the secretaries from Belgium, Canada, Great Britain, Holland, Norway, Switzerland and the United States.

ROUGH SAILING ENCOUNTERED BY COAL REGULATION BILLS

The Frelinghuysen seasonal coal rate bill was sent back to the Senate Interstate Commerce Committee on June 29. This action, taken by a vote of 38 to 26, is believed to have the effect of eliminating legislation dealing with the coal industry from further consideration during the present session. Senator Frelinghuysen's other coal bill, providing for "stabilization" of the industry, mainly through compilation of statistics by the Department of Commerce, probably would also have been recommitted had it formally reached the floor of the Senate when the seasonal rate measure was dropped.

THE FRELINGHUYSEN "stabilization" and seasonal rate bills have passed the first anti-climax of their hand-in-hand legislative career by becoming subjects of debate on the floor of the Senate. The "coal dust twins" have thus set a new record for progress made by legislation dealing exclusively with the coal industry.

The "lay of the land" is being revealed accordingly in respect to circumstances surrounding the bills, to which determined opposition is being asserted, both by the industry and Senators who doubt the practicality of the measures.

Crowning the entire situation is the almost human impossibility for the Interstate Commerce Commission —or any other body—to adjust seasonal rates so as to take into consideration correctly the multitude of local conditions throughout the country that vitally bear on the subject.

However complicated the conditions surrounding the seasonal rate bill may be, a still more involved set of tangles, and consequently a harder legislative fight, is centered in the stabilization measure.

This bill brings a direct factional contest between proponents and opponents of government regulation of industry.

While senatorial advocates of the bill declare that it it merely a plan to stabilize the industry through compilation of statistics and other means and that it is not regulatory in nature, none can successfully deny that it will form a hat-rack for all sorts of regulatory and radical amendments if it is enacted.

It was at conferences recently held between Secretary of the Interior Fall and Secretary of Commerce Hoover, Senator Frelinghuysen and committees from the various branches of the industry that the first real expressed antagonism to the bill made its appearance.

Senator Frelinghuysen held just as firmly to his position that no vital change would be made in the bill and it soon became apparent that the conference would result in little else than clearly defining the breach which existed. Senator Frelinghuysen flatly turned aside the two alternatives offered by the coal men: first, the plan for voluntary rendering of statistics by the industry; second, that the bill be broadened so as to include all industries instead of singling out the mining and marketing of coal.

President J. G. Bradley, of the National Coal Association, pointed out that the present clamor is largely due to failure of the public mind to realize that conditions bred by and following the war are rapidly being rectified and that the problems will solve themselves through natural channels if given a chance.

"There is no need for further legislation," said Bradley. "The coal men are willing and anxious to co-operate with the government and to furnish any facts regarding the business that the government desires. They will work out this situation to the satisfaction of everybody concerned if given a chance. In view of this entire readiness of the coal industry to assist Secretaries Fall and Hoover to obtain and publish immediately and currently the facts in regard to production, distribution and prices which they desire for the information of the government, the public and the industry, we assume that the government will follow its announced policy of less government in business and will not countenance inquisitorial legislation with respect to the industry."

Secretary Fall emphasized the statement that present conditions must be remedied, forecasting the probability of entry by the government into the field as a stiff competitor against the industry in years to come if co-operative efforts at the present were unavailing.

Secretary Hoover gave his opinion that production and distribution figures are necessary for the protection and stabilization of the industry, but singled out cost data as having no direct bearing or virtue toward accomplishing these ends.

Both Secretary Fall and Secretary Hoover left the conference early in its first day, convinced that a state of dead-lock existed and that nothing tangible was to be gained by their continued attendance.

PRESIDENT COYLE LEADS WHOLESALE COAL OPPOSITION

AN UNQUALIFIED STAND against government interference was taken by the American Wholesale Coal Association at the annual convention, held in Washington June 7 and 8. The position of the association was expressed both in a resolution and by the new president in his inaugural address.

That part of the resolution dealing with this subject was as follows:

"We endorse emphatically the action of this convention in 1920 condemning the efforts toward federal control of coal; we record with no little pride our own part in the repeal of those war-time laws by which Congress divested itself of power in favor of various administrative officers, and under our own power to petition the government sincerely and in the name of five millions of Americans engaged in coal and allied industries request, nay, even of our right demand, that no more socialistic experiments be tried under the guise of friendly or adverse legislation on this industry which is but just beginning to recover from the effects of too many doctors."

W. R. Coyle, the new president, predicted the thorough stabilization of the coal industry during the forthcoming year—not its stabilization through legislative enactment, of course, but through ordinary reconstructive business methods. He said, in part:

"No industry in this country underwent such tremendous and far-reaching changes in the transition from a pre-war to a war-time basis as the coal business. The process of readjustment and the return to a normal stable level has been painful and fraught with difficulties, but the end is in sight, and complete stabilization of the coal business of this country is one of the things we may confidently look forward to during the coming year.

"Men of the coal business are anxious to maintain harmonious and sympathetic relations with their customers and the consumers of coal and with the public at large. Coal is a basic industry, and on its sound, stabilized production and distribution rests in large measure the business and commercial prosperity of this country.

"Normal conditions cannot prevail in the coal industry when there is constant interference of regulatory measures and bills in national and state legislatures or proposals to put the industry under arbitrary and restrictive rules. The uncertainties of business are sufficiently great without the added uncertainties of drastic and intensive regulation by federal laws.

"Business confidence between dealers and consumers is not established on a basis of intensive public regulation, but in mutual confidence and an understanding by each of the problem of the other. The coal industry supplied all the needs and requirements of America before the war and it will do it again. The great mass of coal dealers are exerting their efforts to stabilize conditions of coal production and distribution, which will enable them to perform the duty of giving the people of the country a steady and uninterrupted supply of coal adequate for their needs throughout the year. The coal industry will right itself from the effects of the war, just as other American business is doing."

Mr. Coyle, the new president, whose residence is Bethlehem, Pa., succeeds C. L. Couch of Buffalo. C. L. Deering of Chicago was elected vice president and G. H. Merryweather of Chicago was re-elected secretary and treasurer. The following were elected directors:

R. T. Daniels, National Coal and Coke Company, Birmingham; G. H. Reeves, Reeves Coal and Dock Company, Minneapolis; W. J. Teter, W. J. Teter Coal Company, Indianapolis; John J. Sheehan, Dominion Coal and Coke Company, Baltimore; W. E. Macurda, Garfield and Proctor Coal Company, Boston; C. C. Corey, Detroit; C. A. Weinhart, Commercial Coal Company, Grand Rapids; R. H. Lee, J. H. Leonard Coal Company, Kansas City; Alexander Yule, Pioneer Coal and Coke Company, St. Louis; F. S. Martin, F. S. Martin & Co., Omaha; J. Conrad Max, J. Conrad Max & Co., Utica, N. Y.; J. Bert Ross, J. Bert Ross Coal Company, Buffalo; H. L. Frostbauer, Lake City Coal Company, Cleveland; W. D. Eyre, Eyre Fuel Company, New York; Fred Legg, Yogan and Kanawha Coal Company, Cincinnati; J. M. Taylor, John M. Taylor Coal Company, Columbus; H. J. Heywood, W. A. Gosline & Co., Toledo; R. H. Knode, Wentz Company, Philadelphia; Jay W. Johns, Straub-Atkinson Coal and Coke Company, Pittsburgh; W. J. Prescott, Memphis Coal Company, Memphis; L. S. Evans, Eastern Coal and Export Corporation, Richmond; M. L. Taylor, Morgantown Coal Company, Morgantown, W. Va.; C. G. McGill, William McGill & Co., Toronto; J. F. Hersey, Cherokee Coal Company, Louisville; H. M. Bowman, New England Coal Agency, New Haven.

MAY ANTHRACITE SHIPMENTS.—As reported by the Anthracite Bureau of Information, Philadelphia, anthracite shipments during May amounted to 5,793,895 tons, or 173,570 tons less than April and 361,983 tons less than May 1920. Shipments in May a year ago were unusually large because the switchmen's strike had just terminated.

COAL TRADE WITH RUSSIA.—Although private trading between the United States and Soviet Russia has been permitted for a considerable period of time, very little trade has developed as respects American coal. Several cargoes of American coal have been referred to in the Soviet press, but efforts to identify them through references to amounts or to the steamers on which they were transported have proven unavailing. A large consignment which reached Russia from the United States several months ago had a material effect in mitigating the fuel shortage in Petrograd. The shipments which have been made have probably been negotiated through some Esthonian bank via Sweden. Since the gold in Russia is dwindling, it is doubtful whether many more purchases can be made from the United States even if the Soviet government should be disposed to encourage such orders.

ALL HOPE FOR LOWER FREIGHT RATES ON COAL APPARENTLY LOST

THE INTERSTATE Commerce Commission has apparently conceded the futility of plans to use reduced freight rates on coal during the present season as means of warding off the transportation "jam" it expects when the peak of bituminous buying for winter consumption is reached.

With stubborn opposition confronting the Frelinghuysen seasonal rate bill and the heavy coal shipping period drawing closer, the commission evidently has reached the conclusion that it can do little else than ask the largest consumers to buy coal now for storage, even in the face of a lack of special inducement for the action.

Accordingly, appeals have been made to the railroads, public utilities and other large bituminous consumers, psking that they "acquire reasonably liberal reserve supalies at the present time" in order that a repetition of last year's stringency be avoided. The commission has taken this action after devoting deep study to the situation following President Harding's recently expressed desire that transportation congestion of seasonal commodities, notably coal, be prevented through a system of seasonal rates, if possible.

Secretary of Commerce Hoover joined with the commission in placing the administration's power back of the overtures made to the railroads with the aim of inducing them to make voluntary reductions by which the President's desire in reduced rates might be achieved without the necessity of lengthy hearings. These efforts of the administration have proven futile, as Secretary Hoover admitted last week, despite the strength of efforts behind them.

COAL EXPERT JOINS MINES BUREAU'S STAFF OF CONSULTANTS

CARL A. WENDELL, of New York, has been appointed consulting engineer of the United States Bureau of Mines in matters relating to coal washing and coal preparation. Mr. Wendell will leave early in July to visit several eastern stations of the Bureau of Mines, and later will advise with bureau officials as to a program for further development work in investigation and improvement of coal preparation methods.

The principal work of the bureau along this line is being conducted at the Middle West station at Urbana, Ill., and at the Northwest station at Seattle, Wash. Research is being carried on at Urbana, using the laboratory of the University of Illinois, in order to assist in the development of successful methods for cleaning high sulphur coals, particularly coals of the central western field, and to render them suitable for gas manufacture and coking. Data is being collected on factors that affect the washability of a coal; accuracy of sink and float tests on various types of coal; drying washed coal; coal washing with concentrating tables; a basis for the comparison of results of washing tests; and recovery of coal wasted at washers.

The experimental work at Seattle is designed to improve for commercial use the coals of the northwest, which are rarely free from bone and shale or clay partings, and which, owing to the folding and faulting of the measures from which mined, generally contain a large proportion of impurities.

Mr. Wendell has specialized in coal-washing problems in this country since 1903. From 1908 to 1913 he was in charge of the coal washing investigations of the United States Steel Corporation at Joliet, Illinois. Since 1913 he has given his time to such matters in a general consulting capacity.

THE SWEDISH COAL SITUATION

By Dr. Henry M. Payne, Chairman, Coal Export Committee, American Mining Congress

ONE of the criticisms of American coal exporters is their unwillingness to ship less than full cargo lots. British exporters will deliver as low as 400–500 tons at a time. With a fluctuating market, the risk of financing a large shipment is very great. A willingness to make smaller shipments would be equivalent to and often better than extending credit.

Low volatile coal is preferred, and discharge at Swedish ports is good. Sweden is not dependent on coal, however, as during the war when coal prices were abnormal the various industries used cordwood, of which there is an abundance.

Up to 1920 the coal supply came principally from Great Britain. In 1920 about 40 percent of the importations came from the United States. At present large stocks are on hand, and the placing of future orders will depend on the English coal situation.

Before the war Great Britain extended ninety days credit to Swedish importers. During the war, however, English coal exporters required cash against documents, as in America.

Return cargoes of wood pulp, paper and iron ore are the most frequent. There is a heavy demand for coke and a good coking coal is therefore essential. The English coal used in the past has rarely exceeded 1½ percent in sulphur.

Storage facilities are good, and on account of the ice in winter the year's supply is usually taken in during the summer months.

Automatic stokers are being installed in increasing numbers, with the result that larger quantities of slack coal are being used.

About 300,000 tons of lump gas-coal and 4,700,000 tons of run of mine steam coal, and coke, are imported into Sweden annually.

If European coal cannot be secured at a comparable price in the future, the United States is the logical source of this supply.

CONGRESSMAN PROTESTS PENNSYLVANIA TAX ON ANTHRACITE

REPRESENTATIVE Clarence MacGregor of New York has written a letter to Governor Nathan Miller protesting against Pennsylvania's new tax of one and one-half percent upon anthracite. The law goes into effect July 1. Congressman MacGregor asks Governor Miller to protect the citizens of New York, and to call upon the other Congressmen from New York, the governors of anthracite consuming states and the Attorney General of the United States to take steps to annul the burden placed upon consumers. His letter follows:

June 2, 1921.

Hon. Nathan Miller,
Executive Chamber,
Albany, N. Y.

My Dear Governor:

On May 11, 1921, the governor of Pennsylvania signed an act of the legislature placing a tax of one and one-half percent on anthracite coal at the mines. It is anticipated that this tax will yield from seven to ten millions of dollars and thus the people consuming anthracite coal will be required to contribute to the expense of the government of the state of Pennsylvania.

In view of the fact that anthracite coal is a necessity to millions of people and they are now groaning under the burden imposed upon them by the profiteers it is a crime against decency for the state of Pennsylvania to give this additional opportunity to further increase the burden. If it were a tax upon a luxury or an article that was generally produced there would not be any cause for complaint, but anthracite coal is produced solely in the state of Pennsylvania. It is heart-sickening to contemplate the suffering that will ensue among the poor people during the coming winter who will be unable by reason of their poverty to pay the price demanded. It would seem that the anthracite producers would recognize that they have a duty to society but it is apparent that they do not have this realization. There is bound up in the situation grave danger to the Republic. When hunger and cold confront millions of people the government is in danger and when those who control this great necessity of life and happiness prevent its enjoyment by the mass of people they are unworthy citizens and enemies to the welfare of the nation.

The state of Pennsylvania has joined hands with the profiteers to squeeze the people. The tax will undoubtedly be made the basis of a further increase. Action should be taken by the state of New York to protect its citizens and to this end I would respectfully ask that you, as the governor of the Empire State, call upon the members of Congress from New York to give their aid in the rightening of this wrong and also to appeal to the governors of other anthracite consuming states to give their aid and at the same time to call upon the Attorney General of the United States to take immediate steps to annul this burden placed upon the people by the state of Pennsylvania.

Sincerely yours,

CLARENCE MACGREGOR.

PRELIMINARY LIGNITE REPORT SUBMITTED TO BUREAU DIRECTOR

DR. ERICH W. ZIMMERMANN, consulting economist of the United States Bureau of Mines, has submitted to Director H. Foster Bain a preliminary report on the marketability of beneficiated North Dakota lignite. The report analyzes the conditions surrounding and the difficulties affecting the fuel supply of North Dakota and South Dakota and contiguous territory. The ultimate purpose of this study is to provide the necessary economic data upon which an estimate of the commercial possibilities of beneficiated North Dakota lignite may be built up. The report specifically deals with coal production and consumption in the territory mentioned; northwestern fuel prices; northwestern fuel imports with special reference to their sources; the lake coal trade to the northwest; and the railroads and the northwestern fuel supply.

PHOSPHATE ROCK EXPORTERS COMBINE

UNDER THE WEBB-POMERENE Act, the Phosphate Export Association has combined for the purpose of export trade with the Florida Hard Rock Phosphate Export Association. The former association comprises four New York firms and the latter five Florida and Georgia concerns. The main offices of the combination will be in New York and branches will be maintained in Savannah and London.

The United States produces more crude phosphate than any other country. Florida contributes approximately 80 percent of the national total. Africa ranks second in production. Exports in 1920 aggregated 344,896 tons of hard rock, shipped from Fernandina and Jacksonville, and 693,355 tons of land pebble, shipped from Tampa, Port Tampa and Boca Grande. A market for Florida land pebble has been established in Great Britain, Continental Europe and Japan.

WHY NAVAL RESERVES WERE PLACED IN INTERIOR DEPARTMENT

TRANSFERENCE of the administration of naval oil and shale reserves from the Navy to the Department of the Interior, ordered by President Harding, was hastened because of a condition which arose in Naval Reserve No. 1, in California. Wells which had been drilled on adjacent property drew oil from naval reserve lands, making it necessary to offset this condition by drilling on government lands.

On April 15 the Secretary of the Navy called for proposals for drilling upon the California reserves, and the bids were to have been opened April 26, but owing to the announced policy of the administration to bring about closer co-operation between the departments, which included a re-organization of the departments themselves and a re-allocation of departmental activities, the opening of the bids was delayed.

In order to further this plan which had been decided upon by the President, and which had met with general public approval, the secretaries of the Navy and the Interior jointly placed before the President the suggestion that the handling of naval petroleum reserves be placed under the supervision of the Secretary of the Interior. The President approved the suggestion and issued the following executive order:

"Under the provisions of the act of Congress approved February 25, 1920 (41 Stat., 437), authorizing the Secretary of the Interior to lease producing oil wells within any naval petroleum reserve; authorizing the President to permit the drilling of additional wells or to lease the remainder or any part of a claim upon which such wells have been drilled, and under authority of the act of Congress approved June 4, 1920 (41 Sta., 912), directing the Secretary of the Navy to conserve, develop, use and operate directly or by contract, lease or otherwise, unappropriated lands in naval reserves, the administration and conservation of all oil and gas bearing lands in Naval Petroleum Reserves Nos. 1 and 2, California, and Naval Petroleum Reserve No. 3, in Wyoming, and Naval Shale Reserves in Colorado and Utah, are hereby committed to the Secretary of the Interior subject to the supervision of the President, but no general policy as to drilling or reserving lands located in a naval reserve shall be changed or adopted except upon consultation and in co-operation with the Secretary or Acting Secretary of the Navy. The Secretary of the Interior is authorized and directed to perform any and all acts necessary for the protection, conservation and administration of the said reserves subject to the conditions and limitations contained in this order and of the existing laws or such laws as may hereafter be enacted by Congress pertaining thereto."

THE FUEL COST OF MAKING BRICK

TESTIFYING before the House Committee on Appropriations in support of a request for additional funds for investigating heavy clay products, cement, feldspar, slate and other non-metallics, Director H. Foster Bain of the U. S. Bureau of Mines said the world had reached what might appropriately be termed as the "cement age," and that because of the decrease in the lumber supply cement, brick and similar products would be used for building in an increasingly greater extent than heretofore.

The investigations for which the appropriation was sought represented the continuation of an effort begun in connection with the Fuel Administration looking toward reduction of fuel consumption at brick and cement plants. Director Bain said the Bureau of Mines had estimated that the fuel-cost of brick making ranged from 30 to 50 percent of the total, and that this amount could be reduced by from 20 to 30 percent, a reduction which would go far toward offsetting increased labor costs. Dr. Bain said also that progressive plants are cutting down fuel costs by utilizing waste heat, and that this economy could be effected in the making of brick and cement.

In the investigation, the Bureau of Mines will study raw materials and the Bureau of Standards finished products. Dr. Bain hopes that the investigation will also point out a way to effect a reduction in the cost of handling cement.

U. S. LEADS IN RADIUM PRODUCTION

ORE carrying 42.1 grams (about one and one-half ounces) of radium was mined in the United States in 1920, and the nine American radium plants isolated and placed in tubes 32.539 grams (1.15 ounces), valued at $3,253,900.

Ordinarily, no one would bother to use fractions of ounces in reporting the total production of any mineral, but radium is so valuable that every particle must be taken into consideration. It is worth approximately $2,829,478 an ounce, or 136,936 times as much as gold. When such a price is thought of, the old phrase, "worth its weight in gold," becomes trite and useless. Gold and platinum may be measured by the ton and diamonds by the thousand pounds, but radium is measured by the gram, which contains 15.43 grains. Gold and platinum are sold by the ounce and diamonds by the carat (4 1/16 grains), but radium is sold by the milligram, which equals only one two-hundred-and-fifth of a carat.

Since 1911, when the first uranium minerals were mined in this country for radium, ore carrying 186.5 grams (6.6 ounces) has been mined and shipped to reduction plants, and about 125 grams (4.4 ounces) of radium has been extracted in this country. Before the World War some ore was shipped to Europe, and the radium was extracted in France, Germany, and Scotland. The quantity extracted abroad was probably not more than 10 grams, though this is a mere guess. The remainder of the 186.5 grams of radium was probably lost, for at first the quantity extracted in some plants was less than 50 percent of the radium in the ore. Probably 25 percent of the total output has been dissipated on watch faces, signs, etc., mostly during the war, some has been exported, and only 80 or 90 grams (3 ounces) has been placed in the hands of physicians and in hospitals. Europe probably almost exhausted its radium supplies by wasting uses similar to ours during the World War, according to the Geological Survey.

Three States produce radium-bearing minerals in commercially valuable quantities—Colorado, Utah, and Wyoming—but Colorado produces nearly nine-tenths of the whole.

No large deposits of radium minerals are known outside of the United States. Some pitchblende has been mined in Austria, England and Germany; autunite and torbernite have been mined in Portugal, Madagascar, Tonkin, and South Australia; some tyuyamunite has been mined in Russian Turkestan; and a little carnotite and some obscure radium minerals have been mined in South Australia. From the ore mined at all these deposits probably less than 40 grams (1.4 ounces) of radium has been isolated.

The whole stock of radium in the world is probably less than 100 grams (3.5 ounces). 100 grams would be worth $10,000,000. An equivalent amount of gold coin would weigh about 17 tons.

DISTINGUISHED JURIST BECOMES WAR MINERALS CHIEF

SETTLEMENT of war minerals claims has been suspended pending revision of the entire system of making awards. Judge Ira E. Robinson, the new War Minerals Relief commissioner, is studying the whole situation from the beginning, and at the conclusion of his researches will make recommendations to Secretary Fall, upon receipt of which the Secretary will formulate and announce his plans for doing justice both to the government and to the producers.

Judge Ira Ellsworth Robinson, who took office as War Minerals Relief Commissioner a fortnight ago, is nationally known as a lawyer, jurist, author and educator. Before and after his service on the bench he enjoyed a large and lucrative practice in the federal courts, consisting chiefly of coal, oil and gas litigation. In the recently published "History of the Bench and Bar of West Virginia," it is said that his opinions handed down during his eight years of service on the bench of the court of last resort of that state have "never been excelled in soundness of legal learning or clearness of statement in perfect English."

Born near Grafton, West Virginia, in 1869, he was admitted to the bar at Grafton after receiving his law education at the University of Virginia. He served first as county prosecuting attorney and later as a member of the West Virginia senate, and in 1908 was appointed to the state Supreme Court of Appeals in 1907 to fill a vacancy and elected for a full term in 1908. He resigned from the bench in 1915, after having served two years as chief justice. He has lectured on law topics at the University of West Virginia, has lectured frequently elsewhere and has written extensively on legal subjects, being the author, among other things, of "American Recognition of the Roman or Civil Law." He is at present chairman of the criminal law section of the American Bar Association. In 1916 he was the Republican nominee for governor of West Virginia, and in 1917–18, when the young manhood of the country was being drafted for war service, was chairman of the district board for the northern district of West Virginia.

None of the members of the old War Minerals Relief Commission remain in office. Judge Robinson alone will make the recommendations to Secretary Fall. In advance of preparing his own opinion, he is working overtime every day familiarizing himself with the situation. He is approaching the administration of the War Minerals Relief act in the spirit of its enactment, that is, as a relief measure, and with the proper recognition of his responsibilities as an arbiter between the government and the claimants before him. The latter will undoubtedly feel that they have had a fair deal in court, even though their claims are not allowed.

LADOO DEFENDS DOMESTIC INDUSTRY

AMERICAN TALC is equal to the best in the world. This observation was elicited from Raymond B. Ladoo, of the Bureau of Mines, who recently prepared a paper on high grade talc in general and California talc in particular.

High grade talc is found not only in California, but also in Washington, Montana, Wyoming, Arizona, New Mexico and other states. Production was heavy in California until late in 1920, in which year imports from Canada, France and Italy amounted to 21,729 tons, valued at $442,732, and were the greatest in history. The American industry is now suffering from cheaper ocean freight rates and higher transcontinental railroad rates and increased foreign competition caused by lower labor and freight costs abroad, the condition of foreign exchange and the absence of tariff protection.

Aside from these considerations, Mr. Ladoo says, the principal point to be considered in meeting foreign competition is the comparative quality. And in this respect American talc has been proven to equal the best in the world.

"Unfortunately," Mr. Ladoo says, "many domestic consumers have been so thoroughly imbued with the alleged superiority of imported talcs that domestic talcs have not been given a fair chance. It is even reported that unscrupulous dealers have relabeled domestic talc and sold it as Italian talc, with perfect satisfaction to the consumers. Such dishonest trade practices are probably not common, but they serve to refute the erroneous statements regarding the quality of domestic talc."

CENSUS PETROLEUM FIGURES FOR 1919

ALTHOUGH 1921 IS HALF GONE, the United States Census Bureau is just now issuing the summary of its 1920 petroleum industry census, which itself covers the year 1919. The report consists of a detailed statement of the quantities and values of the various products manufactured and of the quantities and cost of the principal materials used during the year 1919.

The figures are based upon the returns from 318 establishments with products for the year valued at $1,632,354,000. At the census of 1914 there were 176 establishments with products valued at $396,361,400, an increase of $1,235,992,000, or 312 percent.

The phenomenal increase is the result of increase in quantity production and in higher unit values. The output of gasoline in 1919 was 3,637,045,000 gallons, valued at $679,775,500 as compared with 1,195,412,000 gallons, and $106,140,200 in 1914, an increase of 204 percent in quantity and 540 percent in value, and in unit value from 8.8 cents to 18.7 cents. Likewise in fuel oils: the output in 1919 was 4,772,185,000 gallons, valued at $318,082,700 as compared with 3,734,092,000 gallons and $84,017,800 in 1914, an increase of 27.8 percent in quantity, and 277 percent in value, and in unit values from 2.25 cents to 6.7 cents; and in illuminating oils the production in 1919, 2,304,850,000 gallons valued at $235,617,500, was an increase of 19.1 percent in quantity and 143 percent in value over that of 1914 with an increase in unit values from 5 cents to 10.2 cents.

The refineries used 357,686,000 barrels of crude petroleum (domestic 319,626,600 barrels, foreign 38,059,400 barrels) in 1919, costing $866,265,000, as compared with 191,276,700 bbls. (185,027,479 domestic and 6,235,245 foreign) and $249,728,000 in 1914, an increase of 87 percent in quantity and of 247 percent in cost, and an increase in unit values from $1.31 to $2.42 per barrel. The marketed production of crude petroleum in 1919 was 377,719,000 barrels and in 1914, 265,762,535 barrels. Thus the refinery consumption was equal to 84.6 percent of the domestic production in 1919 as compared with 69.6 percent in 1914 and 65.9 percent in 1909.

The gasoline product of the refineries does not include casing-head gasoline made at the wells except to the extent that it was purchased and used as a material (6,952,200 barrels). The ranking states, those with products in excess of $100,000,000, are New Jersey, with 9 establishments; Texas, 38; California, 45; Pennsylvania, 53; and Oklahoma, 66.

The figures for 1919 are preliminary and subject to such change and correction as may be necessary from a further examination of the original reports.

A BUG'S EYE VIEW OF WASHINGTON

By Ira L. Smith

MONEY not only forms the Root of all evil but the Grounds for six-fifths of our Marriages and Inspiration for about an equal percentage of the Talk that clutters up the air in Washington as we wabble to press.

Tax and Tariff.

The Money-bag Twins.

The biggest untamed question marks ever Exhibited under One Tent.

It is only natural that they should be the Powers behind the Tongue in these days when everybody is agog as to where the Money is to be gotten with which to Square Things with the butcher, the baker, and the rest of the gang, Nationally speaking.

And what could be more Logical than that the vast Army of Words spouted out in this connection should be Mobilized in the nation's capital?

Senators and Representatives strain their Reserve Stocks of verbs, semi-colons, and what-nots in Expounding and Propounding upon the manner in which we of the common herd are to be taxed and tariffed.

Hordes of effusively interested Spectators from out in the Provinces have been clogging Pennsylvania Avenue for weeks in their efforts to get up to the Capitol that they might slip the Solons a few ear-fulls.

Hauling their feet out from under Mahogany Desks, the country over, they put on their Sunday shoes and knowing expressions and railroad into the Political Hub of the Nation to contradict each other fore and aft.

For weeks, the Sales Tax has been the Bone of Contention into which these Dogs of Dough have been sinking their teeth.

Up steps one tribesman who sagely scratches his ear and then proceeds to explain to the Brave Senators, living and dead, who surround the Committee Table, that the Sales Tax will send the cost of safety pins higher than just about anything.

He foams at the mouth, swears at his mother-in-law, ties slip-knots in his tongue and then, after seventeen short hours of testifying, is carried kicking to the place where brains refuse to be worried by thoughts. Hardly has the roof ceased to quiver under his Acoustic Assault before the same thing, with variations, begins once more at the beginning.

A gentleman from the other end of the land gets a toe hold in the plush carpet and works himself up into a Height of Frenzied Fervor that would do credit to a whirling dervish spinning 'round on the Sahara. Alternately tearing his hair out of its parking place by the roots and gazing in supplication at members of the Committee, he hails the Sales Tax as the Savior of the Universe, the Supreme Boon of mankind and the Only Chance of putting Monkey Glands into the nation's industry.

These two are followed by numberless Hosts of their same ilk and then the janitor brings in a wheelbarrow and carts out the Wearied Witnesses to have their Jaws oiled up for the next day.

But don't for the moment get it into your young head that quiet prevails just because the Committee has to get its collective Sleep and Eat once in a while. That's when the Fun begins out in the Side-shows along the Corridors of the Capitol and in the hotel Lobbies downtown.

Men who have never been formally Introduced to each other get in Fist Fights simply because they are of opposite Financial Faiths. Others who have not Spoken to each other since the Civil War share Embraces when they discover that they Agree on the way in which the Treasury ought to be brought to the bulging point.

Wives are Forgotten as Men gather in utter disregard of their lives and tell each other what Conclusive Fools they are because they can't agree. Even thoughts of Sweethearts are placed in the dusty attics of young men's brains, which, for the time being, are devoted to solution of the Great Queries.

And so it goes.

Arguments are thicker than dogs in Constantinople.

If you can't talk you might as well move out of the Town. As a matter of fact and record, you'd better. Because you'll find the roots of pansies nestling on your chest if you don't have a Defense against being Gabbed into the Next World.

If the national and international Questions that are sitting cross-wise in Washington's mouth are not settled quicker than you or I can say, "Sea sells she shells by the she shore," there won't be any need of our scientists figuring out how we are going to communicate with a bunch of long-eared owls or whatever is up on Mars. If there is anything up there that's brainless enough to listen to an argument, the rumpus will do its part.

Right now the Boys who used to sell magazines on the trains coming into Washington have switched their stocks to well-padded ear muffs and are making money faster than a Profiteer.

Folks arriving in the National Capital to shake hands with and get good jobs out of their Representatives in Congress find astonishing conditions prevailing.

The Dictionary is among the Ten Best Sellers, with "How to Argue at Length," leading the list.

Doctors are going through more Motions than one-armed deaf men making love. Trying to repair all the fractured Ear-Drums is a stiff task.

Children are getting so they begin to talk at the soft-boiled age of three days. Those that can't are tossed into the Potomac.

Dogs and cats are going through all the motions of a Joint Debate.

Man and Woman got Married the other day. She can't Argue. He has grounds for Divorce in the Capital.

Whispers ran out of Style several weeks ago.

Glaziers are getting wealthy as folks hurl Epithets through windows.

Telephone company is going out of business: people just shout without going to the trouble of taking down the receiver.

More Words to the square inch in Washington taken as a whole than there are in the old ladies' home.

Detectives have quit wearing rubber heels. Bedlam of discussion prevents anybody hearing them anyway.

Burglars are having one Field Day after another. Blow a bank safe and folks think an Orator has just caught his breath by the forelock.

Hospitals are full of people sent there for investigation when found with their mouths closed.

While clouds of Smoke rise from the Industrial Furnaces of other hamlets, billows of Tepid Air take sneaks for themselves toward the skies above Washington.

Words without end.

ORIGIN OF PETROLEUM NO LONGER A MYSTERY

ONE OF THE TWO questions which have mystified the world for ages has been answered. An Arkansas man has solved the problem of the origin of petroleum. The other problem, which still staggers the wisest intellects, is, "How old is Ann."

According to the Arkansas investigator, the deep subsurface of the Gulf of Mexico is a great petroleum reservoir whose supply is everlastingly added to by the juice of fishes, said juice being compressed by the weighty waters of the deep, purified by the sands of time and filtered through the rocks of ages. A super-serious excerpt from the report follows:

"Petroleum is a product derived from vegetable and animal fats. All the vegetable and animal fats are used on the land until they serve the purpose they were intended to serve, but sooner or later they find their way to the little fish of the branches.

"The filth of the large cities, the carcasses found dead in the forest, in fact, all the refuse of the earth is washed down into the little streams and consumed by the little fish. And in time they are eaten by the larger fish, and in time they are eaten by the porpoises, sharks, whales, etc., and in time the whales and such things are compassed about by the large parasites, generally called octopuses.

"After surrounding a whale with their numerous feelers they will retire to the bottom of the great waters. Sometimes it takes as long as twelve months to finally consume, by absorption, their victim. But everything has an end, and so do these great parasites. At their end and when their life is no more, and at a depth of about four thousand feet, they being a conservation of about ninety percent fat, and it does not take long to become pus or oil.

"It is a fact that at a depth of about one thousand feet or more, in salt water, nothing rises to the surface, and the habitation of these mighty parasites being the bottom of the mighty ocean, naturally this rendered oil could not rise to the surface, owing to the salt of the salt water. Owing to the fact that the moon, by some mysterious force, controls the motion of the water, at the bottom of the deep, never ceasing, everlasting, finally puts the oil in motion, and being so pushed it finds its way out along the crevices of the rock, and along with it the salt water.

"If this theory of the manufacture of oil is not correct, then who is the man who can explain the presence of salt water in all oil fields?

"It is continually being pushed and pushed out into these crevices, and after it is far enough away from the force of the mighty ocean, it is then carried by capillary attraction to the different parts of the earth. Owing to the fact that oil travels by capillary attraction, it would be impossible to hold it in one location except by an especially prepared receptacle, having a sufficient covering or cap rock, as it were, to keep it in the receptacle.

"In the formation of our earth's surface we find bodies of sand that are formed between two large bodies of rock. This sand forms a conductor and this oil will travel as far as five thousand miles from the seat of its manufacture.

"So with the foregoing, if it were possible for us to walk about in the bed of the Gulf of Mexico, we could see these forms of hard fossiliferous limestone projecting out, forming what is known as a blanket formation, just as we can look around the mountains and see these great beds of limestone extending out and we can see the sand stones and the soft matter underneath them wasting away by the action of the water. Then we can readily see that at the bottom of the mighty waters it is easy enough for the pressure of the great tide to push this oil out underneath the folds of the sand that lay immediately underneath these anticlineul folds and up these beds of sand that were deposited by the streams of the pre-cretaceous age."

The author, in "summing up the conclusion" of his report, recommended that drilling be done "on a certain anticlineul, south of Cave City," which he had selected, his stated reason for the recommendation being that "I see a direct entrance to the great basin at the depth before mentioned where petroleum could come into this large receptacle by capillary attraction, and I see sufficient surrounding of the sand, a cretaceous formation, to hold this body of petroleum in the receptacle with this fossiliferous limestone as a cap rock immediately above this receptacle, at a depth of something like eighteen hundred feet."

FAITH IN "DIVINING RODS" STILL FOUND IN THE LAND

THE LONGING IN MEN'S HEARTS for gold, pathetic at times, has never been brought out more clearly than in a number of letters which have been received by the United States Bureau of Mines recently, containing requests for "divining rods" or "dipping needles" with which to search for hidden treasures.

So numerous have been the requests that the bureau has found it necessary to print a form letter, hinting at the conclusion that the "needles" are not all that the eager treasure seekers feel they are in the way of indicators of wealth.

One letter, received from a man in a small town of northern Alabama, is typical. Assuring the government that he can enrich it at the rate of one million dollars a year, he writes:

"I want to do government work for Washington, D. C. I want a money needle. I can find money in the ground here and I want you to send me the best needle you've got so I can send you the money to be worked over. I will send you $1,000,000 in a year's time."

Captain Kidd's treasure features about one-fourth of the letters received on the subject, all of which are sent to the bureau regardless of the government agencies to which they are addressed. Others tell of relatives who died, leaving unknown the places where they buried their riches.

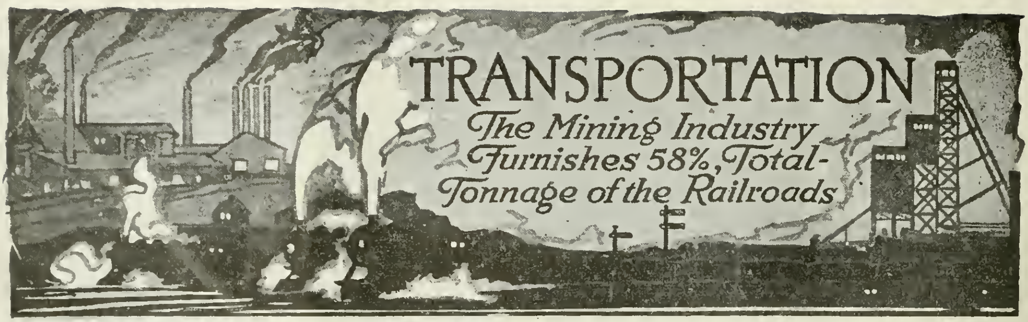
The history of "divining rods" is traceable far back into past centuries. From time to time books have been issued purporting to tell of marvelous "finds" resulting from use of the "needles." Modern mining science, however, is inclined to minimize these reports, as is indicated in the following extracts from the bureau's form letter:

"This office has received many inquiries regarding divining rods, mineral rods, etc., with reference to their adaptability for locating buried treasure, gold and silver ores, petroleum, etc. You are advised that the extravagant claims put forth by people who sell such contrivances have never been substantiated.

"Water Supply Paper 416, recently published by the U. S. Geological Survey, traces the history of the divining rod back to the sixteenth century, and summarizes present knowledge of it.

"Special instruments, such as the dip needle, the magnetometer, and the dial compass, have been successfully used in prospecting for magnetic iron ores in this and other countries.

"A working knowledge of geology and of the conditions under which the ores are likely to occur are of the utmost value in prospecting for minerals. The question of locating buried treasure, however, is one on which it is impossible to give helpful advice of any kind."



RAILROADS NOT IN SYMPATHY WITH RATE REDUCTION PROPOSALS

By C. H. Farrell

THE ATTITUDE of the carriers toward any general reduction in rates has become quite evident during the last few weeks, both through the testimony before the Senate committee which is investigating the railroad situation and particularly in the reply made to various organizations which held conferences with traffic representatives of the carriers in Washington and asked for reductions in the rates on sand, gravel, crushed stone, chert, slag, asphalt, tar, paving brick, cement, building brick, tile, terra cotta, talc, various kinds of lumber and other building materials. One group of shippers in these conferences asked that the advances established under General Order No. 28 be eliminated and new rates made by adding the percentage increase authorized by the commission last summer to the rates in force prior to General Order No. 28. Another group of the shippers asked that the advance authorized by the commission be eliminated.

The carriers in their reply to the shippers call attention to the fact that the tonnage directly affected by these requests approximates 25 percent of the total tonnage of the railways and that there are many articles analagous to those referred to upon which the demand and equity of reduced rates would be equally as pressing and that it would be next to impossible to prevent such articles being included in any reductions which might be authorized. The carriers also believe that the conferences developed that the possibility of an increase in the tonnage under reduced rates was more or less conjectural and that reductions in the selling prices of some of the commodities by amounts exceeding the present total freight charges had failed to create any excess tonnage. The hesitancy of many dealers to place orders in the hope that rates might be reduced was also considered as a reason for the low tonnage.

The carriers insist that they are anxious to work toward a lower level of rates, but that such a result cannot be accomplished until there is a reduction in operating costs as well as an increase in business which will restore the proper relation of net to gross earnings. The statement of the carriers is to the effect that no industry of the country is in more acute distress than the railroads, that many are not earning their operating expenses and taxes, that many more are not earning interest charges, and that no group is earning anything approximating the return contemplated by the Transportation Act. Referring to the recent reduction in wages authorized by the Labor Board the carriers contend that the benefits of that reduction, when it becomes effective, will be more than offset by the decreased volume of business, which is attributed to worldwide conditions. The carriers conclude with the statement that no general reduction can be hoped for until there is something substantial in the prediction that the volume of traffic would increase and when such increase could be expected.

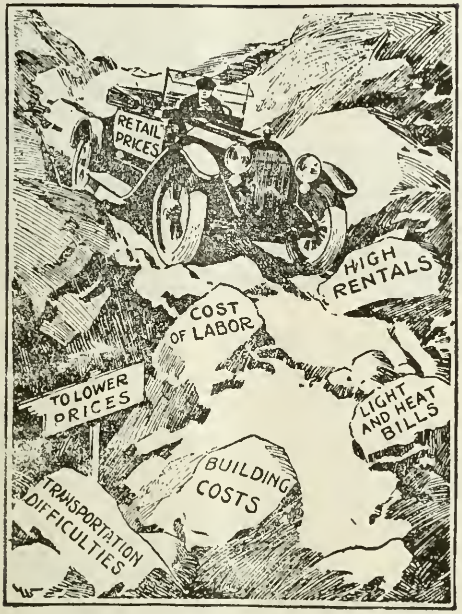
Meanwhile, the work of eliminating inequalities which exist in the rates because of percentage increases will be continued upon application to the traffic managers of the interested railroads. The only general concession so far made is in the rates on fruits and vegetables from the Pacific Coast, where, after numerous conferences, a reduced basis of rates has been agreed to.

EARNINGS.—While the results for the month of April are not considered promising by the railroads, inasmuch as the net operating income totaled $1,494,000 less than it was in March, and produced an annual rate of return of only 2.18 percent on the tentative valuation fixed for rate-making purposes by the commission as compared with 2.30 percent in March, and while the operating income fell short approximately 64 percent of the amount contemplated by the Transportation Act, there is at least one bright spot in that the carriers continued to make reductions in their operating expenses. The ratio of operating expenses to revenues was 86.74 percent compared with 87.19 percent in March, and there were reductions in all districts compared with April, 1920. The increase in revenues ove- April, 1920, was 7.7 percent, and the der crease in operating expenses 6.2 percent, leaving an operating income of $29,201,000 compared with an operating deficit of $23,767,000 in April of last year, which month, it must be remembered, was taken up by the switchmen's outlaw strikes and is not of much value for comparative purposes.

During the eight months since the guaranty of the government to the carriers expired there has been a net operating income of $279,008,000, or an annual rate of return of 2.41 percent on the tentative valuation fixed by the commission. The carriers estimate that this sum is $414,253,000 under the amount contemplated by the Transportation Act. Taking the three main districts we find an increase in each instance in the operating revenues compared with April last year and a decrease in operating expenses, producing an increase in operating income which is quite substantial compared with last year because of the strikes referred to above.

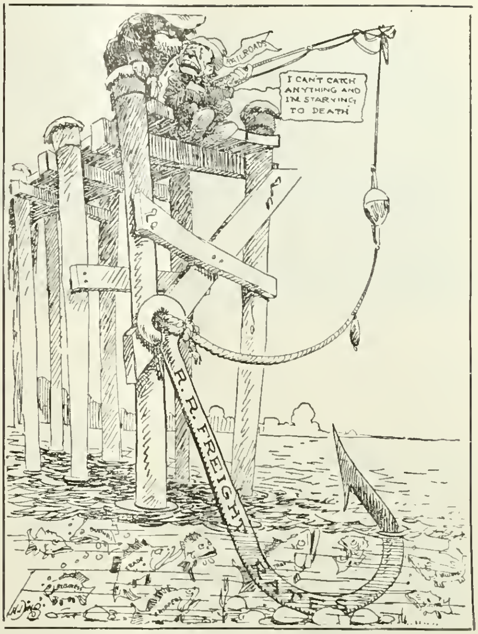
CAR LOADING.—There is a slight indication of increased tonnage disclosed by the figures of the car service division of the American Railway Association for the week ended May 28, in that 18,907 cars more were loaded with revenue freight than during the previous week, when there was an increase of 18,172 over the week before that. In both weeks, however, there were fewer cars loaded than in the corresponding weeks of 1920. During the week ended May 28 the principal increases were shown in the loading of grain and grain products and coal. In fact, the former commodity was the only one to show an increase over the corresponding week last year. The increases are quite general and apply in all districts.

CAR SUPPLY.—On May 31 the average number of cars of all kinds in excess of current freight requirements was 394,040, or



—*Philadelphia Retail Public Ledger*

IF SOME ONE WOULD ONLY CLEAR THE ROAD



—*Darling, in Washington Herald*

MIGHT TRY PUTTING ON A SMALLER HOOK

28,783 below what it was on May 23. Surplus box cars totaled 155,040, which was a reduction of 13,232 cars in eight days. Stimulation of coal movement through the reopening of lake navigation also resulted in a reduction in the number of surplus coal cars, the total on May 31 being 11,340 less than on May 23.

RAILROAD INQUIRY.—The inquiry into the general railroad situation which has been in progress for some time before the Senate Committee on Interstate Commerce was resumed on June 14 after a two weeks' recess, E. T. Whiter, chairman of the Conference Committee of Managers being the first witness. In commenting upon the rules governing maintenance of way employes Mr. Whiter stated that an employe must be paid a minimum of eight hours even though he works only a few minutes. If the employe is not put to work upon reporting because of conditions which make working impossible he is paid for five hours' time, but if he is put to work and then stopped he must be paid for eight hours even though he has worked but five minutes. For each fire built or furnace prepared a blacksmith helper is allowed thirty minutes' straight time, even though he merely lights a gas or oil fire, fifteen or more of which can be started within thirty minutes. As another instance of how the national agreements work Mr. Whiter called attention to the employment of three attendants at a small water pumping station in Baldwin, Michigan, where there is a low-powered dynamo used to generate power to operate a mechanical coal dock and furnish lights for the station as well as to some of the local residents, from which the gross receipts were only $83.34 a month. Previous to the agreements the three men were classed as pumpers without previous experience and their duties consisted of oiling the machinery and starting and stopping the water wheels. Under the national agreements, however, they were classified as generator attendants and awarded back pay totaling more than eight thousand dollars. This produced an annual cost of operating this pumping station of $6,424 a year, which is more than the value of the water pumped and the current generated, and does not include the cost of making repairs to the machinery, which must be done by machinists sent out from headquarters.

Three laborers employed at from 37 to 48½ cents an hour were sent to cut up scrapped material through the use of acetylene torches. The national agreements required their reclassification as carmen and made necessary the payment of nearly $6,500 in back pay.

The agreements produce a waste of service of skilled men in that they are required to do much work formerly done by helpers, who, if they are assigned to the work, must be given the skilled rate although there is no skill required in the performance. As instances of this class of work Mr. Whiter cited the following: dismantling wood and steel freight cars, operating punches and shears, operating hand forge, freight car painting, using sand blast machines, and removing paint and rubbing down passenger equipment. On cross examination Mr. Whiter did not hold out much promise of any early agreement between the carriers and the unions as to the national agreements, and stated that he is of the belief that the relief intended by the Labor Board will be lacking unless there is a change in the attitude of the federal shop crafts because the carriers, in defense of themselves and the public, must resist any further attempts to continue in effect the national agreements.

L. E. Wettling, manager of the bureau of statistics of the western lines, was the next witness, and he dwelt upon the necessity of making up for the lack of adequate maintenance during the period of federal control in order to restore the railroads to a condition where they could meet increased transportation demands as a substantial reason for the increased cost in railroad operations in 1920 compared with 1919.

Senator Cummins called attention to the substantial increase in the cost of maintenance during the six months when the government was paying the carries a guaranty, and Mr. Wettling attributed the necessity of this expense to the condition of the carriers' property immediately after the termination of federal control. The purpose of Senator Cummins and Mr. Wettling was to show that the government would not be required to pay anything because of excessive expenditures for maintenance made during the guaranty period.

Continuing, Mr. Wettling contended that the increased maintenance was caused by two factors: first, the condition of the carriers upon the termination of federal control; and second, the restrictions placed upon maintenance expenses during 1919 by the director general. In considering these increased expenses Mr. Wettling also contended that due consideration must be given to the labor award of July, 1920, retroactive to May 1 of that year, as well as the large increases brought about by the national agreements, none of which was in effect during the corresponding period of 1919. The increased cost of material over 1919 was also referred to.

The large decrease in maintenance expenditures shortly after the guaranty period was attributed to the general business depression which started at that time, the realization that the increased rates allowed by the commission would not produce the revenue expected, the refusal of the Secretary of the Treasury to honor certificates of partial payment for the guaranty period, the attitude of the Railroad Administration toward advances, all of which left the carriers in such condition that they could not continue the maintenance which they felt necessary and desired. The fact that during the guaranty period they did spend large sums on maintenance, Mr. Wettling contended, had no bearing upon the fact that they were being paid by the government, because the Transportation Act specifically provides a limit on the amounts to be allowed for expenditures and constitutes public notice to the carriers that they will have to bear any expenditures in excess of such limit.

Mr. Wettling classed the increase in the amounts expended for maintenance purposes in 1920 over 1919 as not abnormal or excessive, and stated that although the cost of maintenance in 1920 was much greater, owing to the prices of labor and materials, the carriers actually accomplished less maintenance work in that year than they averaged during the three years immediately previous to federal control.

At this point Senator Cummins made the prediction that the cost to the government for the twenty-six months of federal control would reach $1,500,000,000 and that the public will not get a fair idea of the cost until Congress is asked to appropriate the necessary funds.

Concluding his testimony, Mr. Wettling stated that during 1920 the carriers suffered a deficit of two-tenths of a cent for each mile run by a train, that the average revenue for each mile was $5.065 while the average expenses and taxes were $5.067. Taking the last four months of the year, when the increased rates were in effect, the average revenue per train mile was $5.883 while the average expenses and taxes were $5.328, leaving a net railway operating income per train mile of 55.5 cents. During 1916 the average net operating income per train mile was 84.9 cents. During 1920 the carriers enjoyed the largest operating revenues in their history and the smallest net operating income. Of every dollar taken in during that year he stated that 59.9 cents was expended on labor, 10.9 cents for fuel for locomotives, 17.3 cents for material, supplies and miscellaneous, and 10.9 cents for loss and damage, injuries to persons, insurance, depreciation and retirements, and taxes, leaving only 1 percent for return on investment. Commenting upon the efficiency of private operation, Mr. Wettling filed exhibits showing that while the carriers were increasing the number of miles in the movement of each car and each locomotive and were bringing about a heavier loading per car, the efficiency of the individual employe was declining.

DO THE RAILROADS SERVE THE PEOPLE—OR THE UNIONS?

THAT it is next to impossible for the railroads to fulfill their proper function, when the unions are continually grasping for more and more power, demanding less and less work, and making operation more expensive all the time, is the assertion made by John T. Lovett, general manager of the Michigan Manufacturers' Association. Mr. Lovett's observations made an impression upon the *West Virginia Mining News*, which added some comments of its own which are of decidedly more than ordinary interest.

Mr. Lovett said, in part:

"The railroads of the United States are in the process of being throttled by union labor and placed in a situation where a reduction of freight rates will be impossible."

The *West Virginia Mining News* commented upon Mr. Lovett's remarks as follows:

"One of the strongest tendencies in all organizations of men is to extend activities until everything is brought under the control of the heads of the organizations. Once started on this road, the members and officers see in each stage of their progress fresh proofs of a power which they have only to reach forth and seize, to make them masters of the world. This is all the more evident among organizations of workingmen. Being unacquainted with the history of governments—with the ebb and tide of human affairs, they do not realize that power is, perhaps, the most illusory thing in the world. They do not know that with the creation of every movement which aims at absolute power, a reflex motion is set going; and that their own aims at complete domination over human life and its interests will, presently, be crushed under a juggernaut of their own making.

"The pathetic side of it is, that the rank and file of members of such organizations—those whose earnings go into dues and assessments for the use of the officers, do not themselves have any such ambitions. On joining they thought they were benefiting themselves and their families, and had no thought of injuring any innocent persons. But, as time goes on, they find that, little by little, all has changed. Today they come up to the place where the beautiful image of yesterday seemed to stand, but it has moved on—has faded, and still all they have left is their jobs. Their leaders—the officers of the unions, sit in cool white offices, issuing strike orders and ultimatums; but all that is left to them is to work—and pay the assessments. So far as they are concerned or their families, there is at present no advantage to them in the unions or to anyone else except to the union labor leaders themselves.

"Meanwhile, the latter, in order to hold their sway over the union membership, are constantly clamoring for increased pay and shorter hours with one voice, and for more power for themselves in another. They have gone on in this way until, at last, the reflex motion is in full swing. Piling up wages on the railroads has piled on freight and passenger rates, and the dues paying union member has now come up to—not a beautiful vision of a light job and big pay, but no job at all. His leaders have led him out onto a desert where only a mirage mocks his thirst.

"Let those who see the word of Truth pass it along."

RAILWAY ENGINEER'S "WAGE" EXCEEDS GOVERNOR'S

POINTED REMARKS about "living wages" received by railroad employes were made before the United States Railroad Labor Board at a hearing in Chicago during the second week of last month. The story was so interesting that the full account carried in some of the newspapers would suffer by condensation, and it is herewith given in full:

The United States Railroad Labor Board was holding a somnolent session today when a union leader, protesting against pending wage cuts, murmured something about the employes not receiving a "living wage."

The phrase shot Fitzgerald Hall, counsel for the Nashville, Chattanooga and St. Louis railroad, out of his chair so abruptly that there was a general impression that he had sat on a tack.

"Living wage?" he echoed. "Let me tell you about the appalling conditions under which our employes exist:

"Our railroad has a total of 1,200 miles of track. Most of it is branch lines. The engineers on those branch lines make more money than the governor of Tennessee, or the judges of our supreme court.

"The engineer on the Tullahoma accommodation last year made $4,371.92. That is $371.92 more than the governor of Tennessee. Isn't that so, governor?"

Former Gov. Hooper, of Tennessee, now a member of the railroad board, nodded affirmatively.

"Many of our Presbyterian ministers, paid $1,600 annually, get less than one-half of the wages of yardmaster and passenger agents. High school principals in Nashville, Tenn., get $250 a month, compared to $305 a month for yardmasters.

"High school teachers at Paducah, Ky., Huntsville, Va., and Chattanooga, Tenn., receive $125 to $148 a month, while blacksmiths on our road get $185.51 and switchmen $188.56.

"Full professors at Vanderbilt University receive $3,750 a year. At the University of Tennessee they get $2,684 and at Georgia Tech $3,600. Why our conductor on our Rome branch, 18 miles long, gets $5,735.88 a year and the baggagemen make more than assistant professors and instructors.

"The engineer on the Rome branch gets $5,997.04 and the supreme judges of Tennessee get $5,500, while the negro flagmen and porters on the Columbia-Decherd branch get $3,146.40—$146.40 more than the district attorney of Tennessee."

Solicitor Hall, before he concluded, asked the board to increase the pending 12 percent wage cut to 20 percent and thus to wipe out the $600,000,000 increase granted employes a year ago July.

GOVERNMENTAL REGULATION OVERSHADOWS ALL OTHER QUESTIONS

GOVERNMENTAL REGULATION of business has been the storm-center in Congress during the month. The passage of the Packer's Bill called for much oratory and heated argument. It was, however, surprising to note that several members of Congress, who talked so vehemently against government regulation and pointed out so forcefully how the passage of the bill would be contrary to the administration's avowed purpose, when the vote came voted for and not against the regulation of the packers.

As we go to press the fire-works in connection with the Frelinghuysen coal bills is just starting. On June 20 Senator Frelinghuysen of New Jersey opened the debate on his seasonal coal rate bill and the bill for the stabilization of the coal industry. He declared that existing conditions in the industry are uneconomic and that it is his desire to do something constructive to remedy present conditions. In his view the railroad question and the coal problem are the most vital ones confronting the public and the distribution and production of coal at a reasonable price is essential to the life and energy of the nation. The Senator insisted that his proposed legislation did not control or regulate the coal business but was designed to compel full information and publication of all facts regarding the production and distribution of coal. Discussion on the coal bill has been delayed somewhat by the right of way of other legislation.

All of the coal associations have presented their opposition to these measures. It is well understood that the bills for the regulation of the coal industry are but an entering wedge and, on June 22, it was definitely learned that Senator Kenyon of Iowa has nearly completed the preparation of a bill which he will introduce in the Senate for the government control of the steel industry.

In Public Opinion, a department in another part of this month's JOURNAL, will be found expressions from a number of senators in regard to governmental control. The lines are tightly drawn between proponents and exponents of government regulation of industry and, while many senators publicly oppose this legislation, it is understood that they cannot conscientiously resist the appeals of the public, which is urging government regulation.

The committee having in charge the tariff schedule has been working diligently and it is anticipated that the tariff bill will be ready for introduction some time during July. It is understood that excellent progress is being made and that the bill will carry substantial relief to mineral producers. The Senate Finance Committee has been thoroughly engrossed in the drafting of the 1921 revenue law, but it is understood that it will be several weeks before the committee will be in a position to report their bill.

On June 13 the Senate passed Resolution 32 by Senator Bursum of New Mexico, which suspends the annual assessment work on mining claims for the year 1921 and at the same time changes the date required for doing assessment work from the calendar to the fiscal year. However, the House Committee on Mines and Mining on June 18, by an almost unanimous vote, decided not to report to the House the bill as passed by the Senate.

With the appointment of Judge Ira E. Robinson, of West Virginia, as War Minerals Relief Commissioner, it is understood that a general review of all war mineral claims will be made and that an immediate report will be submitted to the Secretary of the Interior. The Interior Department believes it is possible to afford great relief to many bona fide claimants without additional legislation, although the Senate on June 17 passed the Shortridge Bill, which liberalizes the original War Minerals Relief Act. This is S 843, reviewed in our May issue.

Probably the most important bill to the whole mining industry is that introduced by Senator Nicholson of Colorado, providing for a Department of Mines and Mining. This bill is reviewed in the resume which begins on the next page.

A joint committee has been appointed by the House of Representatives to investigate agricultural conditions and prices and their relation to the conditions and prices in other industries.

A resolution which called for considerable opposition and much debate was that which provided for an investigation of the West Virginia mine strike situation. A great many senators were strenuously opposed to the resolution, particularly because it interfered with state rights.

From the Patents Committee Senator Stanley of Kentucky reported the bill which is designed to prevent foreigners from securing United States patents for the sole purpose of protecting them against American manufacture of the same subject matter.

We have with us continually new "blue sky" legislation, the latest being a bill introduced by Representative Denison, of Illinois, for the regulation, sale and distribution of securities, through the mails and other interstate agencies.

Senator Bursum of New Mexico introduced a bill to protect locators of oil and gas lands, who had not made discovery prior to the leasing law, by extending the time for making such discovery.

The fate of the bill introduced by Mr. McFadden of Pennsylvania to preserve the gold standard rests on the decision of the Treasury Department. The bill involves the Treasury Department, both as to policy and administration to such an extent that Chairman Fordney of the House Ways and Means Committee, before which committee the measure is pending, has referred it to Secretary Mellon.

Recommendation has been made to the Senate Finance Committee, which is considering the revenue measure, that gold mining operations be exempt from taxation.

It is understood that one of the principal items President Harding has in view in regard to Alaska is the formulation of a plan whereby the work of all governmental agencies dealing with the territory will be coordinated. It is not anticipated that this bill will come up for discussion during the extra session.

The bill for the creation of a Department of Public Works has been reintroduced in the Senate by Senator McCormick of Illinois. The bill is similar with that introduced in the last session of Congress. The following bills of interest to the mining industry have been introduced:

COAL

H. R. 7081. Introduced by Mr. Linthicum; referred to the Committee on Interstate and Foreign Commerce. (*Seasonal rates.*) The bill amends Section 15 A of the Interstate Commerce Act by adding a new paragraph, which is as follows:

In order to promote continuous operation of coal mines, steady employment of coal miners, and economical use of facilities for distribution of coal, the commission is hereby authorized to initiate, establish, approve, or adjust rates for the transportation of coal during specified seasons or periods which shall be greater or less than the rates for other specified seasons or periods but which in the judgment of the commission will yield as nearly as may be the same annual revenue for like movement as rates without seasonal variation, to be maintained by carriers as a whole or as a whole in each of such coal rate groups or territories as the commission may from time to time designate for that purpose, or by such carrier or carriers as the commission may designate. The term "coal" shall include anthracite and bituminous coal, lignite, coke, including petroleum coke, and briquettes and boulets made from anthracite and bituminous coal and from coke. Whenever the commission is of opinion that an emergency affecting the transportation of coal and requiring immediate action exists in any section of the country, the commission shall have, and is hereby given, authority, either upon complaint or upon its own initiative without complaint, at once if it so orders without answer or other formal pleading by the interested carrier or carriers, to suspend the operation of any schedule in so far as it affects coal rates, whether seasonal or not, upon filing with such schedule and delivering to the carrier or carriers affected thereby a statement in writing of its reasons for such suspension and defer the use of such coal rates, and to initiate in lieu thereof such seasonable rates for the transportation of coal as in its judgment the emergency may require. The commission shall thereupon enter upon a hearing concerning the lawfulness of the schedule, the operation of which had been so suspended, and the proceedings thereon shall be the same as nearly as may be as those provided in paragraph (7) of section 15. Nothing contained in this paragraph shall be construed as repealing, modifying, or denying any other authority heretofore conferred upon the commission.

S. J. Res. 73. Introduced by Mr. Wadsworth; referred to the Committee on Military affairs. (*Government fuel.*) This resolution provides that hereafter when, in the opinion of the Secretary of War, it is in the interest of the United States so to do, he is authorized to enter into contracts and to incur obligations for fuel in sufficient quantities to meet the requirements for one year without regard to the current fiscal year, and payments for supplies delivered under such contracts may be made from funds appropriated for the fiscal year in which the contract is made or from funds appropriated or which may be appropriated for such supplies for the ensuing fiscal year.

H. R. 7106. Introduced by Mr. Linthicum; referred to the Committee on Interstate and Foreign Commerce. (*Coal Stabilization.*) The act is to be known as the Coal Industry Stabilization Act, which includes anthracite, semi-anthracite, bituminous, and sub-bituminous coal, lignite, and coke. The power of carrying out the functions of the bill is vested with the Secretary of the Interior, who shall from time to time investigate the tonnage of coal produced and sold in commerce including railway fuel; stocks of coal on hand in any section of the country and the consumption requirements in such sections; the contract and prevailing market prices received or paid for coal by persons engaged or interested in the mining, sale, storage, or distribution of coal. The Secretary is authorized to require, secure and collect such information currently or at such time or times as in his judgment may be necessary in the public interest. If the President at any time shall deem it necessary the Secretary, under his direction, shall investigate the costs and profits in connection with the mining, sale, storage, and distribution of coal. The information and data furnished is limited in its use to the purposes of the act. The Secretary shall also make investigations as to wages, working conditions, and practices, terms of employment and the living expenses of miners and other workmen employed in mines, washeries, coking plants, and other plants, and he shall to the extent that he deems proper in the public interest place at the disposal of any private or public board, commission, or other group engaged in the arbitration, conciliation, or settlement of any labor dispute arising in any mine from which coal is shipped in commerce, all data and information in the files of his office relating to the matter in controversy. The Secretary shall investigate the practicability of a statutory zoning system; the desirability and practicability of the purchase by one central agency of all coal for the use of the Federal Government; the methods and processes for the storage, inspection, sampling, analysis, purchase, classification, and economic utilization of coal and shall conduct such experiments and researches as he may find advisable. He shall investigate the desirability and practicability of prescribing standards for various kinds and grades of coal prepared for the market. Upon the request of the Secretary each operator, dealer, or other person, and each person who consumes coal in quantities in excess of one hundred tons annually, and each common carrier engaged in the transportation of coal, shall furnish the information required by the provisions of this act. Failure to comply with this provision is punishable by a fine of not more than $1,000 or imprisonment for six months or both. For the sole purpose of securing information and data required the Secretary is authorized at reasonable times to have access to and the right to examine mines, washeries, yards, docks, equipment and other places of business of any operator or dealer and may examine the books, papers, records, accounts, documents, or correspondence of any operator, dealer, etc.

S. 2003. Introduced by Mr. Sutherland; referred to the Committee on Interstate Commerce. (*Amending Commerce Act.*) The bill provides that subdivision 15 of section 1 of the act, known as the Act to Regulate Commerce, approved February 4, 1887, as amended, and further amended by the act known as the Transportation Act of 1920, approved February 28, 1920, be, and the same is hereby, amended by adding at the end of said subdivision the following: "Provided, that nothing contained in the foregoing subdivisions shall authorize the commission at any time to suspend, modify, cancel, alter, or amend the provisions of subdivision 12 of this section which require equal proportionate distribution of cars to coal mines.

H. Res. 94. Introduced by Mr. MacGregor; referred to the Committee on Judiciary. (*Anthracite tax.*) The resolution reads as follows: Whereas the state of Pennsylvania has recently enacted legislation placing a tax of 1½ percent ad valorem upon anthracite coal mined within the state; and the bulk of anthracite coal used by the people of the United States is mined within the State of Pennsylvania; and whereas the imposition of said tax will furnish a basis for a further increase in the already onerous price of anthracite coal: Therefore be it resolved, that the Attorney General of the United States be directed to take such steps as may be necessary to nullify such legislation if in his opinion the Constitution of the United States has been violated thereby.

H. R. 6563. Introduced by Mr. MacGregor; referred to the Committe on Judiciary. (*Transportation of Coal.*) The bill provides that it shall be unlawful for any person, firm, or corporation to transport, or offer for transportation, from one state or territory of the United States or the District of Columbia to any other state or territory of the United States or the District of Columbia, coal upon which any tax has been paid or imposed, or intended to be paid or imposed, in any form by the state or terri-

TOTAL BILLS INTRODUCED SIXTY-SEVENTH CONGRESS TO JUNE 23, 1921, 9,571

COAL:

- H.R. 7081: Mr. Linthicum (Seasonal Coal Rates)
- H.R. 7106: Mr. Linthicum (Coal Stabilization)
- H.R. 6563: Mr. MacGregor (Transportation of Coal)
- H.Res. 94: Mr. MacGregor (Anthracite Tax)
- S.J.Res. 73: Mr. Wadsworth (Government Fuel)
- S. 2003: Mr. Sutherland (Distribution coal cars)

REVENUE:

- H.J.Res. 121: Mr. Longworth (Safeguard Revenue)
- H.R. 6566: Mr. Rosenbloom (Personal Income Tax Exemption)
- H.R. 6806: Mr. Shreve (Tax on Insurance Policies)
- H.R. 6773: Mr. Keller (Excise Tax Land Holdings)
- H.R. 6768: Mr. Keller (Net Estate Tax)
- H.R. 6767: Mr. Keller (Abolishing war profits and corporation income tax)
- H.R. 6769: Mr. Keller (Earned income and surtax)
- S. 1871: Mr. Wadsworth (Amending 1918 Act)
- S. 1903: Mr. King (Delinquent taxes)
- S. 1912: Mr. Jones (Exemption merchant marine)
- S. 2007: Mr. King (Exemption gold mining)

ANNUAL ASSESSMENT:

- H.R. 1813: Mr. Hayden (Calendar to Fiscal Year)
- S.J.Res. 32: Mr. Bursum (Exemption 1921)
- S. 1901: Mr. King (Exemption 1921-22)

GOVERNMENT DEPARTMENTS:

- S. 1957: Mr. Nicholson (Mines)
- S. 1896: Mr. McCormick (Public Works and Lands)
- S. 2080: Mr. Calder (Waste Commission)
- H.R. 6378: Mr. McDuffie (Conservation)

WAR MINERALS:

- H.R. 6510: Mr. Kahn (Liberalizing Original Act)

INTERSTATE COMMERCE:

- H.R. 6780: Mr. Jacoway (Interchangeable 2,000 mile tickets)
- S. 1671: Mr. Shepherd (Federal Control)

ANTI-TRUST:

- S. 1876: Mr. Cummins (Interlocking directorates)

PUBLIC LANDS:

- S. 1853: Mr. Bursum (Utilization waters Colorado River)

LABOR:

- H.Con.Res. 20: Mr. London (Commission to investigate unemployment)

BLUE SKY:

- H.R. 7215: Mr. Denison (Regulating sale of securities)

tory or subdivision of a state or territory within which such coal is mined in addition to any taxes paid or imposed upon property in general. Section 2 provides that for each violation of the act there shall be imposed a fine of not less than $1,000 or imprisonment for one year or both.

REVENUE

H. R. 6773. Introduced by Mr. Keller; referred to the Committee of Ways and Means. (*Excise tax upon privilege of use and enjoyment of large land holdings.*) Section 2 of the bill provides that anyone owning land in value in excess of $10,000, whether in possession or leased to others, shall be subject to an excise tax upon the privilege of the use and enjoyment of such excess at the rate of 1 percent. Where land is leased and the value of the lease is in excess of $10,000, such value shall be deducted from consideration in determining the tax to be assessed against the owner and shall be charged against the lessee.

H. R. 6768. Introduced by Mr. Keller; referred to the Committee on Ways and Means. (*Amending 1918 Revenue Act.*) This bill amends section 401, title 4, of the Revenue Act of 1918 to read as follows: "That, in lieu of the tax imposed by title 2 of the Revenue Act of 1916 as amended and in lieu of the tax imposed by article 9 of the Revenue Act of 1917, and in amendment of this section as contained in title 4 of the Revenue Act of 1918, a tax equal to the sum of the following percentages of the value of the net estate (determined as provided in section 409) is hereby imposed upon the transfer of the net estate of every decedent dying after the passage of this act, whether a resident or non resident of the United States." It also provides for a tax of one percent of the amount by which the net estate exceeds $20,000, the percentage increasing up to ninety percent of the amount by which the net estate exceeds $100,000,000. The bill also provides that any portion of these taxes may be paid in United States bonds which will be accepted at par and permanently cancelled and not reissued.

H. R. 6767. Introduced by Mr. Keller; referred to the Committee on Ways and Means. (*Abolishing war profits and corporation income taxes.*) The bill expressly repeals Sections 900, 901, 902, 903, 904, 905, 906, and 907 of title 9 of the Revenue Act of 1918 (Fortieth Statutes at Large, page 1122); Sections 500, 501, 502, 503, and 504 of title 4 of the Revenue Act (Fortieth Statutes at Large, page 1101); Sections 628, 629, 630, 800, 801, and 802 of title 8 of the Revenue Act (Fortieth Statutes at Large); Sections 1100, 1101, 1102, 1103, 1104, 1105, 1106, and 1107 of title 11 of the Revenue Act; Sections 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 300, 301, 302, 303, 304, 305, 310, 311, 312, 320, 325, 326, 327, 328, 330, 331, 335, and 336 of the Revenue Act of 1918. Section 251 of this act is amended by striking out the words "Subject to tax imposed by this title" following the words "that every corporation."

H. R. 6769. Introduced by Mr. Keller; referred to the Committee on Ways and Means. (*Amending the 1918 Revenue Act.*) This bill defines earned income as wages, salary, or fees for personal services, etc., and unearned income as income derived from rents of land or other property; interest on mortgages, notes or bonds, or other interest-bearing obligations; dividends on shares of stock, etc., and amends section 211 of title 2 of the Revenue Act by inserting at the end the following paragraph: "That the foregoing surtax shall apply only to so much of the tax-payer's income as shall be unearned and that in each instance upon so much of the taxpayer's income as is earned the surtax shall be one-half of the foregoing rates." After section 253 a new section 253a is proposed, which reads as follows: "For the purpose of the tax on unearned income, the taxable income of any individual shall include the share to which he would be entitled of the gains and profits, if divided or distributed, whether divided or distributed or not, of any corporation, joint-stock company or association, however created or organized, formed or fraudulently availed of for the purpose of preventing the imposition of such tax through the medium of permitting such gains or profits to accumulate instead of being divided or distributed, and the fact that any such corporation, joint-stock company or association is a mere holding company, or that the gains and profits are permitted to accumulate beyond the reasonable needs of the business, shall be prima facie evidence of a fraudulent purpose to escape such tax; but the fact that the gains and profits are in any case permitted to accumulate and become surplus shall not be construed as evidence of a purpose to escape said tax in such case, unless the collector of internal revenue shall certify that in his opinion such accumulation is unreasonable for the purpose of the business. When requested by the collector of internal revenue, or any official acting by his authority, such corporation, joint-stock company, or association shall forward to him a statement of such gains and profits and the names and addresses of the individuals or shareholders who would be entitled to the same if divided or distributed. The tax imposed by this subdivision shall not apply to that portion of such undistributed net income which is actually invested and employed in the business or is retained for employment in the seasonable requirements of the business: Provided, that if the collector of internal revenue ascertains and finds that any portion of such amount so retained at any time for employment in the business is not so employed or is not reasonably required in the business a tax of 10 percent shall be levied, assessed, collected, and paid thereon and the finding and ruling of the collector of internal revenue in any and all such cases shall be conclusive and final, unless reversed by the courts."

H. J. Res. 124. Introduced by Mr. Longworth; referred to the Committee on Ways and Means. (*To Safeguard Revenue.*) Section 2 of the bill provides that the Committee on Ways and Means of the House of Representatives, when reporting to the House a bill which imposes any new customs duties may, in its discretion, incorporate in such bill an emergency clause declaring that the safeguarding of the public revenue requires the immediate taking effect of any or all such new customs duties or increased amounts of customs duties; and such emergency clause may also declare that the safeguarding of the public revenue requires the immediate taking effect of any other provision or provisions of such bill. Section 3 provides that whenever any new customs duties shall become effective and due in the manner provided for in section 2, every person, who, prior to the date so determined, shall have made any contract to deliver any article, without contract provision for the payment of duties subsequently imposed by law on such article delivered shall become liable for the payment of such duties.

S. 1871. Introduced by Mr. Wadsworth; referred to the Committee on Finance. (*Amending 1918 Revenue Act.*) This bill amends section 3 of subdivision (b) of section 403 of the Revenue Act, which provides for the exemption of bequests, legacies, etc., for the use of the United States by providing that American missionaries duly commissioned and serving under boards of foreign missions of the various Christian denominations in the United States of America, dying while in the foreign missionary service of such boards, shall not be deemed nonresidents of the United States, but citizens of the United States and residents of the state of which they were residents at the time of their commission and their departure for such foreign service. Stock in a domestic corporation owned and held by a nonresident decedent, and the amount receivable as insurance upon the life of a nonresident decedent shall be deemed property within the United States.

H. R. 6566. Introduced by Mr. Rosenbloom; referred to the Committee on Ways and Means. (*Personal income tax.*) This bill amends the 1918 Revenue Bill by adding to subdivision A of section 5 the following: That necessary expenses incurred for medicines, for bills paid to physicians, surgeons, and hospitals, and for funeral expenses, not exceeding $1,000 in the aggregate in any one taxable year, shall be allowed as deductions in computing net incomes of less than $5,000.

S. 1903. Introduced by Mr. King; referred to the Committee on Finance. (*Amending 1918 Revenue Law.*) This bill amends subsection (e) of section 250, providing that if any tax remains unpaid after the date when it is due, and for ten days after notice, there shall be added as part of the tax the sum of 5 percent on the amount due and unpaid, plus interest at the rate of one percent per month upon such amount from the time it became due but providing that any taxpayer from whom demand may be made, may, within ten days furnish the collector of internal revenue with bond and sureties for the payment of the tax within ninety days and thereupon be relieved of the penalty of five percent. If the penalty of the bond be claimed after default, five percent of the tax shall be added to the amount to be recovered thereunder. Any amount which is the subject of a bona fide claim for abatement such sum of 5 percent shall not be added and the interest from the time the amount was due until the claim is decided shall be at the rate of one-half of one percent per month.

S. 1942. Introduced by Mr. Jones; referred to the Committee on Commerce. (*Exemption tax American Merchant Marine.*) The bill provides that no person or association resident in a foreign country or corporation organized in a foreign country shall be subject to the provisions of any income or excess-profits tax now or hereafter enacted with respect to earnings derived from the operation of ships and that the said exemption from taxation shall be allowed only to persons or associations resident or corporations organized in foreign countries, which said foreign countries grant a similar exemption from taxation to persons or associations resident or corporations organized in the United States.

S. 2007. Introduced by Mr. King; referred to the Committee on Finance. (*Exemption Gold Industry.*) Paragraph (e) of section 304 of the Revenue Act is amended to read as follows: In the case of any corporation engaged in the mining of gold the portion of the net income derived from the mining of gold shall be exempt from the tax imposed by this title, or any tax imposed by Title 11 of the Revenue Act of 1917 and assessed but remaining unpaid, and the tax on the remaining portion of the net income shall be the proportion of a tax computed without the benefit of this subdivision which such remaining portion of the net income bears to the entire net income.

H. R. 6806. Introduced by Mr. Shreve; referred to the Committee on Ways and Means. (*Amending the 1918 Revenue Act.*) This bill amends clause 1 of subsection B of section 213 of title 2 of the Revenue Act, which reads as follows: The proceeds of life insurance policies paid upón the death of the insured to individual beneficiaries or to the estate of the insured, shall be amended to read as follows: The proceeds of life insurance policies paid upon the death of the insured to individual or corporate beneficiaries or to the estate of the insured: Provided that all corporations which, during the year 1918 or thereafter, shall have received or shall receive the proceeds of such policies shall not be required to account for the same as profit, and if any corporation shall heretofore have been taxed on any such proceeds of insurance policies and shall have paid such tax, such amount of tax on said proceeds shall be refunded to such corporation. Clause A of subsection 1 of section 234 of title 2 of the Revenue Act, which reads as follows: That in computing the net income of a corporation subject to the tax imposed by section 230 there shall be allowed as deduction: (1) All the ordinary and necessary expenses paid or incurred during the taxable year in carrying on any trade or business, including a reasonable allowance for salaries or other compensation for personal service actually rendered, and including rentals or other payments required to be made as a condition to the continued use or possession of property to which the corporation has not taken or is not taking title, or in which it has no equity, shall be amended to read as follows: Section 234 (a) That in computing the net income of a corporation subject to the tax imposed by section 230 there shall be allowed as deduction (1) All the ordinary and necessary expenses paid or incurred during the taxable year in carrying on any trade or business, including a reasonable allowance for salaries or other compensation for personal services actually rendered, and including rentals or other payments required to be made as a condition to the continued use or possession of property to which the corporation has not taken or is not taking title, or in which it has no equity, including premiums paid by a taxpayer on the life of an officer, employe, or other individual financially interested in the taxpayer's business, for the purpose of protecting the taxpayer from loss in the event of the death of the officer or employe.

ANNUAL ASSESSMENT

H. R. 4813. Introduced by Mr. Hayden; referred to the Committee on Mines and Mining. (*Changing the period for doing annual assessment work from calendar to fiscal year.*) The bill amends section 2 of

"An act to Amend sections 2324 and 2325 of the Revised Statutes of the United States concerning the mineral lands," approved January 22, 1880, to read as follows: "Section 2. That section 2324 of the Revised Statutes of the United States be amended by adding the following words: Provided, that the period within which the work required to be done annually on all unpatented mineral claims located since May 10, 1872, including such claims in the Territory of Alaska, shall commence on the first day of July succeeding the date of location of such claim: Provided further, that on all such valid existing claims the annual period ending December 31, 1920, shall continue to and include July 1, 1921, and the annual period to end December 31, 1921, shall continue to and include June 30, 1922."

S. J. Res. 32. Mr. Bursum. This resolution expressly states that the provisions of section 2324 of the Revised Statutes of the United States, which requires on each mining claim located and until a patent has been issued therefor, not less than $100 worth of labor to be performed, or improvements aggregating such amount to be made each year, be, and the same is hereby, suspended as to all mining claims in the United States, excluding Alaska, during the calendar year of 1920 and up to and including the thirtieth day of June, 1921: provided, that every claimant of any such mining claim in order to obtain the benefits of this resolution shall file or cause to be filed in the office where the location notice or certificate is recorded, on or before the first day of August, 1921, a notice of his desire to hold said mining claim under the provisions of this resolution; and hereafter the labor required under the provisions of section 2324 of the Revised Statutes of the United States shall be performed during each fiscal year beginning the first day of July and ending on the thirtieth day of June. This bill passed the Senate June 13 and is now before the House Ways and Means Committee. The Committee is practically unanimous against it.

S. 1901. Introduced by Mr. King; referred to the Committee of Mines and Mining. The bill expressly states that the provisions of section 2324 of the Revised Statutes of the United States which require on each mining claim located, and until a patent has issued therefor, not less than $100 worth of labor to be performed for improvements to be made during each year be, and the same is hereby, suspended during the years 1921 and 1922 and until the first day of July, 1923, and that thereafter the year within which such yearly labor or improvements shall be made shall end upon each thirtieth day of June, succeeding: Provided, that every claimant in any mining claim in order to obtain the benefits of this act shall file or cause to be filed in the office where the location notice or certificate is recorded on or before June 30 in each of the years 1921, 1922, and 1923, a notice of his desire to hold said mining claim under this act.

GOVERNMENT DEPARTMENTS

S. 1957. Introduced by Mr. Nicholson; referred to the Committee on Mines and Mining. (*Department of Mines.*) The bill establishes an executive department to be known as the Department of Mines, for the purpose of encouraging, protecting and promoting the welfare of the mineral industries of the United States. This department shall cover the coal, petroleum, and gas industries including iron, and all the nonmetallic and quarrying industries, whether of minerals or rock. It shall cover in this connection geological investigation, exploration and surveying, the technical problems of mining the ore, problems of marketing, together with the gathering of statistical information, but it shall in no way deal with minerals when they pass from the raw into the manufactured state. The department shall include the following bureaus: Bureau of Mining Technology, Bureau of Mining and Applied Geology, Bureau of Mineral Markets, Bureau of Public Mineral Domain, Division of Mineral Statistics, Division of Publications and Division of Accounting and Disbursing. There shall be also an assistant secretary of mines, in addition to the secretary of mines. The bill specifically places the Bureau of Mines, the Geological Survey, and the War Minerals Relief Commission under the jurisdiction of the Department of Mines.

H. R. 6378. Introduced by Mr. McDuffie; referred to the Committee on Agriculture. (*Department of Conservation.*) The bill creates a department of conservation which shall include the present Forest Service and the Bureau of Biological Survey, the Geological Survey and the National Park service and the Bureau of Fisheries. There is also created a new bureau to be known as the Bureau of Birds and Game. The Secretary of Conservation is charged with the collection of data to be reported at least once a year containing full and complete statistics relating to the natural resources of the United States

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S. 1896. Introduced by Mr. McCormick; referred to the Committee on Expenditures. (*Department of Public Works and Lands.*) This department is to supplant the present department of the Interior and shall be headed by a secretary and three assistant secretaries whose duty it shall be to develop and conserve the mineral, forest, land, and water resources and to administer the public lands, parks, and forests, and shall have jurisdiction over the construction, maintenance, and repair of all public works under the control of the United States, including railroads, highways, roads, bridges, telephone and telegraph lines, buildings, monuments, memorials, parks and grounds, irrigation and drainage systems, water supply systems, dams, etc. Section 5 of the bill authorizes the setting aside of a special fund in the Department of the Treasury, to be known as the Public Works and Public Lands Fund. This department will have control of and the allotment of all space in the several public buildings owned or leased by the United States in the District of Columbia, with the exception of the Executive Mansion and office of the President, the Capitol Building, the Senate and House Office Buildings, the Capitol power plant, the Smithsonian Institution and the Congressional Library. Section 7 provides that all authority, powers, and duties conferred and imposed by law upon the Secretary of War and the Chief of Engineers of the United States Army relating to the improvement of rivers and harbors; the protection and preservation of navigable waters, and all matters pertaining to that department; the preservation of Niagara Falls; the construction, maintenance, and repair of public buildings, monuments, memorials, roads, bridges, etc., the maintenance of public parks and grounds; and all other public works requiring engineering or architectural skill in their execution, unless they are for the exclusive use of the Military Establishment, shall be conferred upon the Secretary of Public Works and Public Lands. The proposed department shall embrace the following departments now in existence: General Land Office, the Geological Survey, the Bureau of Mines, the Reclamation Service, the National Park Service, the Division of Capitol Buildings and Grounds, the Alaskan Engineering Commission, the office of the Supervising Architect, the Bureau of Public Roads and the Forest Service, the office of the Superintendent of the State, War, and Navy Department Building, the Commission of Fine Arts, the Board of Engineers for Rivers and Harbors, the Board of Engineers of New York City, the Office of the Supervisor of the Harbor of New York, the United States Engineer Offices, the Mississippi River Commission, the California Debris Commission, the Board of Road Commissioners for Alaska, the Office of Public Buildings and Grounds and the Washington Monument. The Federal Power Commission is abolished and its duties conferred upon the Secretary of Public Works and Public Lands. All military parks, monuments, and memorials now under the supervision of the War Department, such as Gettysburg, are transferred from the War Department to the Department of Public Works, together with all unexpended appropriations available when the act takes effect. The Secretary of the proposed bureau is given authority, subject to the approval of the President, to make such changes in the organization of the bureaus so desired as may be essential to economical and effective administration and is authorized to reorganize or consolidate any of the bureaus under his jurisdiction. The Secretary of Public Works shall report annually to Congress.

S. 2080. Introduced by Mr. Calder; referred to the Committee on Commerce. (*Waste Commission.*) The bill creates a commission to be known as the United States Industrial Waste Commission, whose duty it shall be to report to the President by September 1, 1922, upon the waste in the utilization of available supplies in the United States of timber, power, transportation, oil, coal, essential minerals, and other basic raw materials, to recommend improved methods for their utilization, as well as the elimination of intermittent and seasonal production. The Commission shall serve without compensation and the Department of Commerce shall pay for the incidental expenses in connection with its investigation.

WAR MINERALS

H. R. 6501. Introduced by Mr. Kahn; referred to the Committee on Military Affairs. This bill amends the act entitled "An Act to provide relief in cases of contracts connected with the prosecution of the war, and for other purposes," approved February 2, 1919, by adding thereto the following section: That the Secretary of War, the Attorney General and the Secretary of the Navy acting jointly are hereby authorized to adjust pay and discharge any and all claims against the United States for or on account of the use or manufacture by or for the United States of any patented invention relating to radio communication in cases in which such patented invention was used without agreement with the owner as to compensation therefor; such settlement of claims to cover both past (whether prior to, during, or after the war) and future use where practicable in all cases, and to be based on the determination by such agency as the said Secretaries and Attorney General have designated or established or may designate or establish, of all questions of infringement, validity of patents, and value of inventions: Provided, that this provision shall not be so construed as to deprive owners of patents who shall not accept settlement under this act of any rights of action conferred by the acts for the protection of the owners of patents approved June 25, 1910, and July 1, 1918, respectively; and for the payment of such claims the sum of $2,500,000, or so much thereof as may be necessary, is hereby appropriated out of any money in the Treasury not otherwise appropriated.

INTERSTATE COMMERCE

H. R. 6780. Introduced by Mr. Jacoway; referred to the Committee on Interstate and Foreign Commerce. (*Amending the Interstate Commerce Act.*) The bill provides that each common carrier shall issue for the period of one year interchangeable, nontransferable, two-thousand-mile tickets, to be sold at the rate of $2\frac{1}{2}$ cents a mile, for transportation of persons on any lines of such carrier without regard as to whether the points of origin and destination for any single journey are within the same state. The Interstate Commerce Commission is given authority to modify the rate thus established whenever in its opinion there is a substantial alteration in the average rate level for the transportation of persons by such carriers throughout the country as a whole.

S. 1674. Introduced by Mr. Sheppard; referred to the Committee on Interstate Commerce. (*Federal Control.*) The bill provides for the termination of Federal control of railroads and provides that the period of federal control shall not be computed as a part of the periods of limitation in actions against carriers, receivers of carriers, or in claims for reparation to the commission for causes of action arising prior to federal control.

ANTI-TRUST

S. 1876. Introduced by Mr. Cummins; referred to the Committee on Interstate Commerce. The bill provides that sixty days from the date the bill becomes effective no carrier shall have any dealings in materials, supplies, or make any contract after December 31, 1920, for construction or maintenance of any kind, to the amount of more than $100,000 in any calendar year with another corporation, firm, partnership or association not a common carrier when the carrier shall have as a director, president, manager, etc., any person who is at the same time a director, manager, etc., of such corporation. It provides a fine of $25,000 for every carrier who shall violate and a fine of $5,000 for every director, agent, manager, or officer who knowingly voted for or directed such violation.

PUBLIC LANDS

S. 1853. Introduced by Mr. Bursum; referred to the Committee on Irrigation and Reclamation. The bill provides for a joint commission to be composed of representatives of the states of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, and one representative of the United States to be appointed by the President, which shall negotiate and enter into a contract between the states and the United States respecting the further utilization and disposition of the waters of the Colorado River and streams tributary thereto and fixing and determining the rights of the states and of the United States in and to the use, benefit and disposition of the waters of the stream. A proviso is attached making it obligatory that any arrangement, compact, etc., entered into by the representatives must be ratified by the legislature of each of the states and by the Congress of the United States.

LABOR

House Con. Res. 20. Introduced by Mr. London; referred to the Committee of Rules. (*Unemployment.*) The resolution provides for a joint commission to be known as the Joint Commission on Unemployment to investigate and report to Congress within ninety days to what extent the present unemployment is due to a concerted effort on the part of capital to force a reduction of wages; the advisability of establishing a national building loan fund, a national network of employment exchanges; a national system of unemployment insurance, a national minimum wage law; and such other legislation as will minimize the periodic recurrence of unemployment.

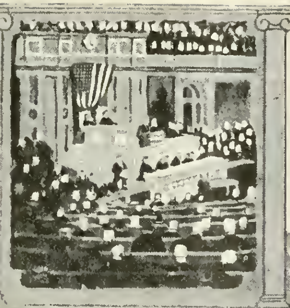
BLUE SKY

H. R. 7215. Introduced by Mr. Denison; referred to the Committee on Interstate and Foreign Commerce. (*Regulating sale of securities.*) Securities are defined as meaning notes, stocks, bonds, certificates of interest in a profit sharing agreement, certificate of interest in an oil, gas, or mining lease, collateral trust certificate, any transferable share or similar evidence of beneficial interest in or title to property, or any other instrument commonly known as a security. Section 2 provides that it shall be unlawful for any person to deposit, carry in the mails of the United States any postal card, prospectus, circular, or pamphlet intended to offer for sale either directly or indirectly any securities or solicit subscription for such securities or procure advertisement for sale of such securities in newspapers or other publications, when in either case such letter is addressed to any person at any place in any other state, territory at which it is by the law in force in such other state at that time unlawful to sell or offer for sale such securities. Any person violating the provisions of the act will be fined $2,000 and imprisoned not more than two years, or both. Every sale or contract for sale made in violation of this act shall be void. The same provisions surround the transportation of similar securities by any railroad company, express company, telegraph company, telephone company, or other agency of interstate commerce.

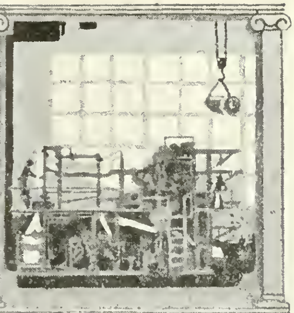
H. R. 6813. Introduced by Mr. Kreider; referred to the Committee on Judiciary. The bill provides for a fine of $1,000 imprisonment not exceeding one year, or both for any person who knowingly disseminates any assertion concerning the quality, the quantity, the value, or merit or use, the present or former price, the purpose or motive of any sale of any security, merchandise, articles, commodity, or services or concerning the method or cost of production of such merchandise, which is untrue or calculated to mislead.

MISCELLANEOUS

S. 7099. Introduced by Mr. Darrow; referred to the Committee on Industrial Arts and Expositions. The bill appropriates $50,000 to be expended in the celebration of the one hundred and fiftieth anniversary of the signing of the Declaration of Independence by the holding of an international exhibition of arts, industries, manufactures, and products of the soil, mine, and sea in the City of Philadelphia, in the State of Pennsylvania.



PUBLIC OPINION



FEDERAL INTERFERENCE CONDEMNED BY LEADING LAWMAKERS

GOVERNMENT INTERFERENCE and regulation of business has continued to hold the spot-light in all discussions on the floor of the Senate, whether it be the large appropriation bills, immigration, control of the packers, or what not. SENATOR MYERS made the following interesting comment in a speech on June 13:

"I am willing to vote to appropriate money for anything which is absolutely necessary for the conduct of our federal government. It costs something to conduct these investigations and if any good could result I would not object. Where Congress has no legitimate right or authority to interfere I do not believe in wasting the time of Congress and the money of the taxpayers.

"Congress has gone mad about investigating and regulating. It has a perfect mania for investigation and regulation of everything under the sun. It has carried its mania for investigation too far. If it could abandon this idea and would go to work and enact such laws as are absolutely needed for the welfare of the people of the country, such laws as are within its province and needed to remedy the evils of the times, and dispense with all of its promiscuous investigating, and adjourn at an early day, I think the country would be better off and Congress would have the thanks of the people of the country. Controversies should be referred to state governments for help in settling their differences. I do not believe the interests of the public would be served nearly so well by the investigation by Congress of a matter over which Congress has no jurisdiction, as they would be served if Congress should confine itself to enacting a few needed laws and then adjourn and go home and let the country and the taxpayers have a rest.

"The clothing manufacturers want Congress to investigate the striking clothing makers union. I am opposed to that. Let the state authorities of New York handle those matters. I think it is unwise, improvident, and imprudent for Congress to investigate every industrial disturbance and statement that strikers are violating their agreement, and every complaint of employes that employers are not treating their employes fairly.

"A committee of the United States Senate is now engaged in investigating the condition of the railroads of the country, when every senator knows the cause of the condition in which the railroads find themselves. There is a resolution pending before the Senate to investigate the strike of the shipping employes and a resolution for the investigation by the Senate of the West Virginia coal strike. I do not believe congressional investigations of strikes, as a rule, do any good. I think the only result is, generally, to prolong the strike and industrial disturbance. I do not believe that the investigation of the steel strike a year or two ago did any good to anybody or accomplished any good purpose whatsoever.

"For goodness sake, I ask Senators have the states no rights or functions at all any more? Are the state lines to be simply obliterated, to be no more than geographical boundaries? What are we going to do with the states of the United States? Abolish them? We are gradually but surely doing it."

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THE VERY TRYING PERIOD through which business is going makes doubly pertinent President Harding's definite statement that there will be no further governmental interference in business. SENATOR KING in an address on the floor of the Senate emphasized this statement by saying:

"I do not object to large corporations, nor do I complain about individuals uniting for the purpose of carrying on legitimate business undertakings. Our industrial system calls for large investments and for corporations possessing great resources. I am protesting, however, against individuals or corporations forming combinations in restraint of trade or for the purpose of stifling competition. I protest against the organization of trusts and monopolies and their control, or attempted control, of legislation, either state or national. Our nation has grown economically and industrially under the competitive theory. The law of supply and demand has resulted in industrial progress and in the development of our country.

"The American people are willing for legitimate profits to be made. This is a government of the people, and it is their right to live under just and equitable laws. The basis of democracy is a denial of special privileges and an insistence upon the doctrine of equal rights to all. I believe in what has been denominated the 'capitalistic' theory of government—that is, in the right of individuals to own and control property and to make contracts. I believe in a policy that develops individualism, encourages initiative, promotes self-reliance, strengthens local self-government, and breeds a nation of independent, virile, and self-governing people. But I warn those who are engaged in business that they owe an obligation to this republic, to their states, and to the people. If they misuse their corporate powers, or if they form trusts and combinations which destroy competition, if they seek to dominate business, control legislation, and bring it within the sphere of their influence and authority, they will be betrayers of their country. There can be no absolutism in this government and there can be no autocracy and absolutism in business. This must remain a free country with free opportunity for the humblest. If capital abuses its opportunities and if monopolies and combinations are permitted to thrive and to exercise their despotic power, an irresistible demand will develop, either for nationalization of many industries or for governmental control of the same. If men engaged in big business and in great enterprises are wise, they will deal fairly with the public. They will seek no special privileges and desire no advantages. They will not covet enormous dividends. Big business should seek the public weal and the advancement of the cause of the people. It should seek to cheapen products and not enhance their prices. It should seek cheaper transportation, improved methods of production, and greater rewards for labor. It should be more interested in bringing joy and happiness to those who toil and to lighten their burdens than in the amassing of stupendous fortunes and piling up assets to be estimated in hundreds of millions, if not in billions. The remedies suggested for monopolistic evils may be worse than the disease but they will be offered if economic oppression is permitted. I hope the new Attorney General of the United States will make the Sherman antitrust law a sharp and shining sword for the punishment of these combinations engaged in interstate commerce, whose criminal operations have been so oppressive. No foe from without can ever destroy this republic. Its enemies are internal. It will continue to be the light of the world; to be an example to the world, so long as the principles embodied in the Declaration of Independence and the Constitution of the United States are adhered to, and so long as we are guided by the spirit of justice which in the end must dominate and reign supreme throughout the world."

ON THIS SAME subject, MR. WOOD of Indiana vehemently upheld President Harding's declaration. In part, he said:

"Government interference in business has been baneful in the past; it is baneful now and will prove equally baneful in the future. We have now about eighty departments or bureaus or divisions of government in Washington that are making laws for the people. We are becoming less and less a democratic government in form and more and more a bureaucratic government in form. The bureaus have pursued this policy of annoying business until they have discouraged it to the point where business men are fearful today when they are called upon to invest in business enterprises. We created the Federal Trade Commission, beautiful upon its face, for the purpose of encouraging legitimate business and protecting it, if you please, against unjust competition. Was that purpose carried out? No. The result is that they have done more to damn and discourage the business of this country than any other activity in the country and if I had my way about it, I would repeal the law in the interest of the business of this country. We were killing the goose that laid the golden eggs when, through the legislation of this body and the legislation of the several states, we made it impossible for business to function properly. The time is rapidly approaching when it will not be possible for us to set a hen without getting the consent of the Department of Agriculture. We had better get back to the old practice and instead of hampering business and regulating it to death, we should say to the business of the country, to the men who have the innate genius to do big business, 'Do your best, and the laws of the country will protect you as long as you live within the law.' I am not in favor of the working man doing more than his share in regulating this government, either."

THE BILL for the control of the packing industry, in further discussion by the House of Representatives, more clearly defined the attitude of our congressional delegates in regard to the interference of government in business. MR. PARRISH said:

"Our experience during government control ought to teach us that government ownership and control of any industry is inimical to the best interests of a democratic government. Such experiences as the government control of railroads should cause thoughtful and conservative men to turn from the idea of the government owning or controlling the industries of the nation or the democratization of any industry as a permanent policy. We want to stop the tendency so evident of late which seeks to centralize all power in bureaus and commissions in Washington and leave to the institutions of the states power to function over matters which in their nature are local to the states. This is the only way we will be able to maintain a government truly responsive to the will of the people."

CONGRESSMAN ANDERSON also was one of the standard bearers in behalf of President Harding's famous statement, in discussing the bill for the regulation of the packers, said:

"We have been trying direct prohibitions of law for more than 100 years. They have proved absolutely inadequate. Industry is progressive. The methods of industry and of manufacture and distribution change from day to day, and no positive iron-clad rule of law can be written upon the statute books which will keep pace with the progress of industry."

LARGE NUMBERS of bills have been introduced amending the Sherman Anti-Trust Law and many speeches have been made in Congress for and against monopolies. MR. HUDDLESTON recently made the following interesting comment upon this subject:

"We have passed the early stage in American industry and are now in the second stage, that of monopolies. These monopolies actually exist. They can not be broken up by law, because they are stronger than the law. Indeed, to destroy them would work a substantial economic harm. They are the product of our civilization and are the industrial form which our civilization has taken. To destroy them would be to fly in the face of conditions of gradual growth and of business ideals which are the fruit of the times. The Sherman Act served a useful purpose in its day, and so, no doubt, the Clayton Anti-trust Act yet does, as applied to some business; but in the main, laws forbidding monopolies and trusts are no longer applicable. They do not fit modern conditions. To actually destroy the trusts would leave a condition of economic chaos. We are entering upon an era of regulation because without monopolies there is no occasion for regulation. We must recognize that monopolies exist in certain great lines of industry and business, and that they ought to exist, for economic laws demand that they should exist. We should, therefore, recognize the right of such monopolies to exist and proceed with courage and determination to see to it that they perform their proper function in our economic life, that they do not oppress the people, that prices are fair, that profits are not unreasonable. In short, we must proceed to regulate the monopolies. We must not dream on of competition and the sooner the policy of regulation is adopted the better for the people. So far as many industries are concerned, steel, iron, coal, oil, etc., American industry has passed through the era of competition and is now in the era of monopoly. If we cannot regulate monopolies then we must own them. I do not favor public ownership nor its extension into industry."

SENATOR REED draws a distinction between regulating monopolies and regulating big business, a distinction between regulation and interference. In an address against the passage of the packer's bill, Mr. Reed said:

"I protest against any more bureaucratic government over the people of the United States. If you can do this thing not only to the great packing houses but to every man engaged in the line of business of butchering; if you can vest in one man in Washington the power of absolute control, the power to make rules which constitute laws—if you can do that in reference to all the branches of this business, then where does the Senate of the United States intend to stop?

"I draw distinction between regulation of a thing that is a natural monopoly always subject to governmental control as railroads; I even draw a distinction between a regulation of packing houses that may have grown to such huge proportions that some people think they control markets. I draw a distinction between a law which pronounces its anathemas against evil practices and specifies and defines those and a law which vests in an individual the right in substance and effect to pass laws and to change them from day to day according to his whim. If you can take over this power, not with reference to concerns that are charged with being trusts but with reference to the small as well as the great, I ask what is the limitation? The same line and course of conduct could be properly pursued with reference to coal, iron, steel, wheat, corn, oats, shoes, clothing, household utensils, to everything that constitutes a necessity of life. Thus, we might appoint a half dozen or more men in Washington with power to control the business and lay down the rules and regulations governing all the affairs of our people, to indulge in every kind of espionage, to invade their homes, to centralize here in Washington huge machines that would be a social oligarchy controlled by a few individuals.

"I am not opposing laws that will limit and punish the power of monopoly. I will subscribe to any law that singles out evil practices and proposes to penalize them. That is a government of law, a government of laws that can be enforced in the courts of the land, and it is proposed to set up what in the end is bound to be a socialistic oligarchy which will bring ruin and great distress upon our country and in the end what? There is nothing in our experimentation that leads me to believe that we can expect fortuitous results in an enterprise of this kind."

PROBABLY NO BUREAU ever created in the federal government has received so much condemnation as the Federal Trade Commission. However, business at large will be interested and encouraged by the statement of HOUSTON THOMPSON, chairman of this Commission, in an address delivered before the National Wholesale Grocers' Association, in Chicago, on June 9, in which he said:

"I believe most heartily in the masculinity and upstandingness of the American business man. He needs no governmental crutch. He does not need to hand over his initiative to his government, to be instructed in advance as to what he can or cannot do. The government must not be called in to act as his legal guardian.

"The Federal Trade Commission has advocated over and over again greater efficiency through standardization and elimination of useless varieties, styles and specifications in manufacturing.

"Savings and economies can come only through education, not through arbitrary governmental edicts or associations that by concert of action may seek to enforce limitations upon their members. The human equation that is constantly working in the public mind must be taken into account.

"All the world loves an optimist. We need optimism now, but the one who makes it possible for the optimist to exist is he who sees that we shall build and rebuild on bedrock—a foundation of fair competition mingled with a saving spirit."

Mining and Petroleum Digest

NEW YORK SALUTES THE WEST

WESTERN state governors and distinguished citizens who came to Washington in May to solicit federal co-operation in the world's greatest reclamation project (an account of which was printed in the June issue of the MINING CONGRESS JOURNAL) took occasion to make a side trip to New York. They created such a favorable impression that the *New York Herald* felt impelled to pay them this compliment:

"New York is now enjoying a visit from delegates from thirteen western states, California, Oregon, Utah, Nevada, Washington, Arizona, New Mexico, Idaho, Wyoming, Montana, Colorado, Nebraska and Oklahoma, who have come here to wake up eastern public opinion to support plans for putting water on arid lands.

"These energetic Americans know exactly what they want and they do not spare any pains to go after it. They are loaded with statistics, facts and well considered deductions. They are convinced they have a good thing for themselves and for everybody else, and they are not afraid to tell how good they think it is or to ask help to put it through. They are ready to exhort or to submit to cross-examination. They are men with a mission, who take pride in being known as boosters, and want no fame as knockers. Nobody will hear from any of them the admission that any of the thirteen states they come from is not a fine, rich, glorious community. Any of them will admit, however, if closely questioned, that his own state is considerably better in soil, climate, scenery, transportation facilities and people than any other state, but he will be careful to point out that this means simply supreme excellence on the part of his state, not that the others are lacking in admirable natural and acquired characteristics. We salute these sturdy, upstanding, two-fisted gentlemen with affection and respect. We wish we had some pioneers like them to go after the reclamation of agricultural districts which have fallen into decay in the East. Their spirit and their temper would be a fine thing in a number of Atlantic seaboard states."

WHEN THE WINNER LOSES

A HIGH WAGE which no one can collect is nothing like as satisfying as a lower wage which insures the regular Saturday night pay check. There is one union in Chicago which has learned this lesson, and its members can congratulate their secretary, MICHAEL ARTERY, that they learned it by observation rather than by experience. For when the building contractors proposed a wage cut of 12½ percent, Mr. Artery addressed his men as follows:

"What's the use of making a dollar and twenty-five cents an hour if you can't get work? The cost of living has dropped 29 percent in the last year. We are asked to make a cut in our wages to correspond to this decrease. The carpenters' union has rejected the proposal. The result is 80 percent of them are out of work and are not drawing a cent. At the reduced wage they might be working and making a living. Let's trim our wages, boys, and we'll all eat."

The union voted unanimously to accept the cut.

WHO IS A LOBBYIST?

AN ANSWER to this question was carried in the June issue of the MINING CONGRESS JOURNAL. That others have been thinking about the same question, and answering it correctly, is seen by the following in the *West Virginia Mining News*:

"There is agitated at the present time in Congress a movement practically to proscribe business men who come to Washington or who send their agents to oppose legislation which is inimical to them or to make suggestions for legislation which would be helpful. It is doubtful that Congress will pass any of the proposed bills which would compel the registration of every representative of every industrial or financial concern, and which would make up a blacklist designed to pillory before the people the industries having such representatives. Congress must remember that the manufacturer is as much a part of our people as the labor leader or the farmer. It is curious how, from time to time, these indirect attacks on business crop up, and coincident thereto is great flurry over what is called the intimidation of Congress by corporations. Of course, the old timer in Washington laughs heartily at these statements when he recalls the fact that in Washington for years powerful union labor lobbies have operated brazenly, dictating to and directing Congress. If this statement appears strong let us recall the activities of the American Federation of Labor with its representatives planted in the galleries, with its telegrams and letters threatening possible political reprisals, with its open activities, which in the case of any other organization would have been absolutely condemned. Other organizations have followed example and, without regard to the right of prohibition, the fact remains that the Anti-Saloon League has been a dictator to Congress in times past. Whether it is today or not we do not know. There are other organizations, and among those protesting against them have been Congressmen themselves, but they controlled too many votes to have any Senator or Representative introduce a bill compelling their registration and making public their arguments. Let us have our constitutional rights and the open door in politics. If the President receives men of all classes and discusses with them questions of policy, there seems to be no good reason why Congress should bar the door to any. There is at least no reason why Congress should not hear the representatives of corporations precisely as it hears the representatives of the American Federation of Labor, with this exception; that corporations do not send representatives with whiplash and threat to any Congressman. If lobbying is to be abolished, let us begin with the American Federation of Labor, and then see that equal liberty is given to every organization in the presentation of its arguments and its support of what it considers its rights.

METHODS OF THE U. M. W. OF A.

EXCEPTION IS TAKEN to union propaganda methods by the LaFollette (Tenn.) *Press*. What the editor particularly objects to is the circulation by the United Mine Workers of America of a contract-breaking charge against the LaFollette Coal and Iron Company when as a matter of fact the company has always operated on the open-shop basis. The editor, who describes his paper as one "with an independent mind, serving all the people," tells the whole story interestingly:

"A circular has been distributed broadcast by the United Mine Workers of America ordering miners not to seek or accept employment at the mines of the LaFollette Coal & Iron Company. The reason given is that the company has broken an agreement with the United Mine Workers of America, notwithstanding the fact that the LaFollette Coal & Iron Company has always conducted its business on an open shop basis and therefore never at any time had a contract with that organization as such.

"We quote from the circular: 'We take this occasion to warn all laboring men who believe in right and justice to stay away from this mine until such time as the company shall see fit to live by its agreements. The tactics used by this company are in line with the movement that is being advocated by the big interests in America to enslave the workers. If you believe that a man who toils has a right to live in American decency and enjoy the freedom guaranteed to us by the constitution of our country and her flag, do not seek or accept employment at the mine of the LaFollette Coal & Iron Company, LaFollette, Tennessee.'

"To those who have been following the tactics of the United Mine Workers of America, their method, as demonstrated in the circular, is characteristic. Why don't they give their real reason for warning miners to stay away from LaFollette? Why do they always drag forth a cheap brand of patriotism in their appeals? Don't they know that people who are really patriotic do not need to shout their patriotism through a tin trumpet from the housetops?

"The reference to the constitution was ill-advised. If the unknown, unacknowledged author of the circular had read the aforementioned constitution he would have found in it a guarantee of equal rights to all citizens. That guarantee is big enough to include the right of workers to quit when they want to, and broad enough to include the right of other workers to work when they want to. And any interference on the part of the United Mine Workers or anybody else, in the exercise of that individual right to work, is illegal and reprehensible. The United Mine Workers need to learn, once for all, that free men have the right of self determination. No loyal member of their organization has such a right, because his determination is at the will of the leaders.

"The reference to the LaFollette Coal & Iron Company's alignment with the big interests of the country to 'enslave the workers' is another appeal to ignorance and misinformation. It evidently refers to the open shop movement which is sweeping the country like wild fire. The open shop movement will not enslave, it will liberate men who have been driven into strikes by so-called leaders who presumed to do all the headwork for the laborers. The open shop is the American plan and its ultimate triumph is as sure as death and taxes. It will triumph because it is right. Wrong may rule the land while waiting justice sleeps, but right and justice have a way of mightily prevailing when they do prevail.

"The intent of the circular is in keeping with the report that has been circulated at Dayton, Tenn., to the effect that several pitched battles had been staged here; that men had been killed; that the mine train had been fired on and that no miner was safe in LaFollette. This report was brought to LaFollette by Dayton men who came here to investigate for themselves. After spending a day investigating, they wired for their tools and wired their friends that peace and quietude reigns in LaFollette and have reigned all the time.

"The most convincing answer to the circular is the fact that the mines are running full time, six days to the week, four weeks to the month, by the will of the free miners who owe no allegiance to any man and take no dictation from anybody or anything except their own consciences. It was their initiative that opened the mines and it is their independence that will keep them open. They did not ask the United Mine Workers of America if they could go to work and they will not consult that organization if they want to quit. They are attending to their own business and all they expect of anybody is that others do the same.

"In this connection it appears to us that it is more honorable to accept work at a reasonable wage and to support dependents in decency and comfort, than it is to remain idle and become the recipients of premiums on cussedness to the tune of five dollars a week.

"Despite the 'warning' note in the circular, there is a place in LaFollette for any honest, sober, independent thinking miner to find work without danger of molestation from any source. The circular is a slander on LaFollette and as such deserves the kind of reception it got among fully ninety-five percent of our population. The public here regards it as unwarranted meddling by outsiders in an affair that is purely local. As long as the United Mine Workers of America are so bitter against LaFollette, why don't they withdraw their forces and leave LaFollette to the fate that is so certain to come to all non-union places, according to their doctrines?

"Yea, verily, this is a curious world."

CAN THE PEOPLE BE FOOLED?

THEY cannot, if the question under discussion is the open-shop question, in the opinion of the *Arizona Mining Journal*. The writer quotes Samuel Gompers as making public addresses against the "nation-wide open shop movement," in the course of which he said: "Equal opportunity before the law, before government and in the democratic production of industry—that is what we demand and nothing else will satisfy labor." The editor then discusses the statement of Mr. Gompers as follows:

"These men talk about 'equal opportunity before the law, industrial autocracy and democratic production.'

"Would either Gompers or Morrison allow any free born American citizen to work at his trade beside one of their union members if he did not have a card in the same unit? No—they would let him starve in the street or call a strike if an employer put him to work. Is this a sample of equal opportunity which they cry about? Is this democratic production? Or is it real labor autocracy? Let Mr. Gompers or Mr. Morrison answer. Would they allow a man to work in a so-called union shop without a card?

"Is it any wonder the American people are backing the open shop movement when they realize that the closed shop program denies the primary rights guaranteed every individual by the constitution and about which Mr. Gompers likes to prate.

"Belonging to a union should be neither a bar nor a requisite to securing employment. The principle of labor unionism is fine and can accomplish much good, but the demands of labor autocracy are vicious. The public is not against the laboring man, it is against the labor dictators who exploit both the laborer and the public."

LABOR UNIONS CAN BE SUED

FOURTEEN STATES now have laws making it possible to sue voluntary associations, which includes labor unions. It is contended by business men that there would be fewer strikes, less picketing and considerably less interference with commerce and freedom of contract by "business agents" if the unincorporated organizations which they represent could be held responsible in damages for the harm they sometimes do. This same view is taken by *Law and Labor* (New York), which says:

"On May 9 Governor Cox, of Massachusetts, signed a measure passed by the recent session of the Massachusetts legislature, providing for suits by and against voluntary associations in their common name. This is a measure advocated by the League for Industrial Rights. In signing the bill the governor issued a statement in which he said:

"'The bill recognizes the true Massachusetts principle that in the eye of the law the most powerful organization stands on an equality with the humblest individual. An individual is responsible for his acts, and if a group of individuals desire to act as a collective unit, then they must assume collective responsibility.

"'Thirteen other states, including such great industrial states as Connecticut, New York, New Jersey, Michigan and Ohio, have similar laws, and no one has suggested that the laws in those states have caused any injustice or embarrassment to any innocent party. If any of our citizens feel that they have won a great victory in the passage of the laws, or if any feel that any new burden is placed upon them I believe both groups will be disappointed. The act relates merely to procedure, and in no way changes any fundamental rights.'

"This measure was bitterly protested by the labor unions and it was announced on May 12 that the legislative agent of the American Federation of Labor filed with the secretary of state in Massachusetts a petition for a referendum on the measure. If 15,000 signatures petitioning the referendum are obtained the law will go before the people at the next general election. This activity on the part of labor is part of its policy of refusal to submit the question of the rights of labor organizations to the courts which the people have established and maintain for determining the rights of all men and securing the protection of organized society. It is a part of their fight, not against employers of labor, but against society itself.

"It is sufficient to say that every step which subjects the activities of men to the scrutiny of the law and makes it easier for those who have been wronged to be protected or compensated, is a step in advance toward the greater security of the state, the encouragement of business transactions, and the peace of men's homes."

GASOLINE TAX HURTS BUSINESS

PENNSYLVANIA'S new gasoline tax not only adds an additional burden to the consumer, but along the borders will drive business into adjacent states. This is the view taken in a press dispatch, which discusses the situation as follows:

"Pennsylvania's levy of a tax of one cent a gallon on gasoline will add one cent to cost to the consumer. Oil men say it will not affect them, except that they will necessarily co-operate with the state secretary in collection of the tax. Gasoline is selling wholesale in Philadelphia for 26 cents a gallon and in Pittsburgh for 25, compared with 26 cents in New York and 24½ in New Jersey.

"If gasoline advances a cent in Pennsylvania, it will throw some of the gasoline business across the state border, chiefly into New Jersey. This rule is already working along the New Jersey-New York border, where there is a difference of a cent and a half in wholesale price as quoted by Standard Oil Co. of New Jersey and Standard Oil Co. of New York. Motorists, by going a hundred yards or so across the New Jersey border, can get gasoline two cents cheaper. The chief marketer in Pennsylvania is Atlantic Refining Co.

"Pennsylvania is the first large gasoline-consuming state to have a tax on gasoline. The purpose is to raise money for road building and improvements. Other states which have a similar tax are North Carolina and Oregon. In both cases the tax resulted in an increase in price to consumer. A prominent oil man and tax expert says it would cost the states more to collect the tax direct from the consumer than it would bring in revenue; this is why the oil companies must co-operate in collection. He is inclined to regard the tax as a result of what he calls an 'epidemic' of taxation, but does not think it will spread to other states. Such action is not contemplated, as far as known, in New York or New Jersey, nor in any other important gasoline-consuming states.

"Because of importance of gasoline to the oil industry, from point of view of profits, the addition of a cent to the price is regarded as rather unfavorable. A tax of one cent a gallon would amount to from 3 to 4 percent on price paid by the consumer. However, it is not expected consumption will be affected much, because gasoline prices have already been cut about 20 percent from the high level of 1920."

ANTIMONY IN 1920

EXCEPT for the antimony in hard lead, no antimony has been produced in the United States from domestic ores since 1918, according to the United States Geological Survey.

Hard lead carrying about 14 percent of antimony is a by-product of the smelting of the precious metals, and the quantity of hard lead produced in 1920, which was 12,535 short tons, carried 2,033 tons of antimony and was obtained from both domestic and foreign ores. A small quantity of metallic antimony was produced by one smelter from both foreign and domestic ores, and about 5,000 tons of secondary antimony was recovered from old alloys, scrap, and dross. The average price of antimony in 1920 was 8.49 cents a pound.

Imports for consumption, calculated in terms of metallic antimony, were 11,768 short tons, as compared with 7,867 tons in 1919. Their value was $1,435,823. They consisted of 1,709 tons of 40 percent ore, 1,375 tons of 75 percent matte, 9,817 tons of metallic antimony, and 298 tons of 80 percent antimony oxides and other compounds.

The general imports were 12,174 tons of antimony and 1,709 tons of ore containing 682 tons of antimony, an increase of about 76 percent as compared with those of 1919. The metal came mostly from China and Japan and the ore from China, France, and Bolivia. The imports of metal from China increased 175 percent over those of 1919.

The imports of type metal were 14,944 short tons, or more than twice those of 1919. Their antimony content was assumed to be 2,063 tons, or about 14 percent.

The exports of foreign antimony from the United States in 1920, mainly to Canada, amounted to 448 tons, more than double those of 1919.

The world's production of antimony in 1920 was about 14,000 metric tons, as compared with 11,900 tons in 1919. Nearly all of it was produced in China, Mexico, and France. For several years China has produced more than 60 percent of the world's supply.

The world's average annual peace-time consumption of antimony, not including that in antimonial lead, is about 22,000 metric tons, of which the United States consumes 7,000 tons. The United States also uses annually about 2,100 tons of virgin antimony contained in domestic antimonial lead and 3,500 tons of secondary antimony recovered from old alloys, scrap, and dross, a total of 12,600 tons.

ORE CAR PURCHASES AUTHORIZED

THE CHICAGO & NORTHWESTERN railroad has been authorized by the Interstate Commerce Commission to assume obligations totaling $9,630,000 for the purchase of new equipment. Five hundred ore cars are included.

MINING COURSES OFFERED AT CARNEGIE TECH

TWO FELLOWSHIPS in mining research and two in teaching research for the scholastic year 1921–22 have been offered by Carnegie Institute of Technology in co-operation with the U. S. Bureau of Mines. Each fellowship is valued at $750 and appointment will be for ten months, beginning July 1 for the first two mentioned and beginning August 1 for the latter. Assignment duties will be performed by the fellows in the Pittsburgh experiment station of the Bureau of Mines.

Summer courses for mine workmen desiring to qualify as fire bosses and mine foremen, lasting four weeks, have been announced by the Institute to begin June 27. The course will include mine laws, regulations, timbering, gases, lamps, explosives, ventilation, drainage, management, haulage, rescue and first aid.

The faculty will include the following from the Bureau of Mines: A. C. Fieldner, acting superintendent of the Pittsburgh station; John Vlizard, fuel engineer; J. D. Davis, fuels chemist; Dr. E. W. Dean, petroleum chemist; L. C. Isley, electrical engineer; G. W. Jones, gas chemist; D. J. Parker, chief of the division of safety cars and stations; J. W. Paul, coal mining engineer; S. P. Howell, explosive engineer, and Dr. Reinhardt Thiessen, research microscopist.

FOUR FELLOWSHIPS AT UNIVERSITY OF MISSOURI

IN CO-OPERATION with the United States Bureau of Mines and the state mining experiment station, the school of mines and metallurgy of the University of Missouri has offered four fellowships to graduates who have the equivalent of a bachelor of science degree. The income of each fellowship is $800 for the year beginning July 1.

The purpose of the work is to undertake the solution of Missouri mining and metallurgical problems. The four fellowships will be granted in mining, ore dressing, physical metallurgy and electro-metallurgy. Applications should contain certified copy of collegiate record, statement of professional experience and names and addresses of three references, and should be sent before September 1 to the director of the school of mines and metallurgy of the University of Missouri, Rolla, Mo.

CITY FIREMEN TO TAKE BUREAU OF MINES TRAINING

FIREMEN from the Washington, D. C., fire department will visit the Pittsburgh station of the Bureau of Mines during the first week in July to receive training in the use of the self-contained breathing apparatus. These firemen will receive training and will then be able to instruct their fellow workers in the use of the apparatus upon their return. Mayor William Hale Thompson of Chicago has also taken up with the bureau the matter of sending some of his men to Pittsburgh at the same time.

—Here insert 19 pica bold matter

BEDFORD LIMESTONE, 1920

ABOUT 738,000 SHORT TONS of oolitic limestone, valued at $7,579,879, was sold in the Bedford-Bloomington district, Indiana, in 1920. The sales in 1919 were approximately 521,700 short tons, valued at $3,946,332.

This district, which produces more building stone than any other stone quarrying district in the United States, furnishes annually from 35 to 45 percent of the entire building stone output of the country. The sales of building stone in 1920 amounted to 6,343,536 cubic feet (about 460,000 tons), valued at $7,286,679. Though this was an increase of about 33 percent in quantity over the output of 1919 it was nearly 40 percent less than that of 1912, the record year—10,442,304 cubic feet. The value reported for 1920 was $7,286,679, an increase of 92 percent over the value for 1919 and the largest value ever reported. The average value per cubic foot was $1.15 in 1920, 79 cents in 1919, and 33 cents in 1912.

More than 75 percent of the building stone was sold by quarrymen to milling companies or was shipped as rough blocks or rough-sawed stone. The average value per cubic foot of the building stone sold in 1920 was 72 cents. The corresponding average in 1919 was 55 cents. The dressed stone sold by quarry companies that operated their own mills showed an average value per cubic foot of $2.53 in 1920 and of $1.37 in 1919.

The wide popularity of this stone as a building material is indicated by its shipment in 1920 to every state except Alaska, Arizona, Nevada, New Mexico, Oregon, Utah, and Vermont. In 1919 Wyoming was also excluded from the states to which the Indiana stone was shipped. In 1920 Illinois took the largest quantity—1,273,514 cubic feet—and New York and Michigan came next, with 611,160 and 600,902 cubic feet, respectively. Ohio took 485,163 cubic feet, Pennsylvania took 306,321 cubic feet, and Canada over 309,000 cubic feet.

BUREAU OF MINES FIELD CHANGES

G. J. SALMON has been made superintendent of the Mississippi Valley Experiment Station, succeeding Dr. J. J. Rutledge, who was transferred. C. A. Herbert will remain as district engineer for the Central States District. No immediate change is contemplated in the personnel handling investigations into coal mine atmosphere in Indiana and Illinois, coal mine explosions, coal analyses and coal mining methods in the central states. Mr. Herbert expected to submit a final report on his investigations into subsidence from coal mines in Indiana and Illinois by July 1, after which date the investigations were to be continued by Dr. Rutledge. Handling of mineral leases on the Quapaw zinc-lead lands, Oklahoma, will be continued in the hands of Messrs. Coghill and Baumgarten, with Dr. Rutledge as supervisor.

OIL AND GAS PERMITS

RECENT oil and gas prospecting permits have been issued by the General Land Office as follows:

ALASKA: *Juneau District*—Harry R. Taylor, 2560; Barbara Ryston, 2560; Katherine Shelton, 2560; John C. Daugherty, 2560; Lloyd Nelson, 2560.

CALIFORNIA: *Independence District*—S. A. Peel, 320; T. A. Morrissey, 2539; A. L. Tait, 2240; Jas. T. Jordan, 2560.

Los Angeles District—Leland J. Arms, 2557; Leah E. Jay, 80; Paul H. Marley, 160; E. C. Grainger, 320; Ansell D. Bassett, 2405; Milton T. Koll, 161; Samuel T. Kistler, 165; John K. McGregor, 422; Paul D. Robinson, 1475; W. P. Roe and others, 320; Ernest Martin, 2344; Elizabeth Newton, 160; John Williamson, 1796; Peter G. Peterson, 640; Wm. H. Gamble, 2572; Frances McFetridge, 160; Frank M. Strobridge, 960; Henry C. Brando, 665; Esther M. Linter, 160; Florence F. Vining, 772.

Visalia District—R. E. Diggins, 440; Constance Lee de Pastor, 240; F. L. A. Graham, 240; G. K. McGuineagle, 640; Jos. A. Whelan, 320; Howard Herrington, 320; National Exploration Co., 640; Paul Morteson, Jr., 160; Chas. F. Kramer, 240; J. H. Rainey, 160; H. A. Hopkins, 160; John H. Dougherty, 240; R. E. Scheller, 640; Washington H. Ochsner, 2538; Louise L. Tentholty, 240; A. E. Ute, 160; H. S. Williams, 314; Thos. M. Canum, 2556.

El Centro District—Samuel T. Marshall and others 2540; Daniel McNeil and others, 2560; Walter G. Johnson, 2560; H. R. Benton, 2560; O. V. Bixby and others, 560; Chas. E. Anderson and others, 2553; J. D. Fans, 2560; Robt. D. Beal, 640; Chas. W. Hays, 1280; Gus C. Shores and others, 640; J. W. Schuler and others, 2555.

COLORADO: *Durango District*—Lucien H. Norton, 960.

Glennwood Springs District—J. Bradford Herndon, 80; Austin Corcoren, 2422; Geo B. Pickett, 2553.

Montrose District—J. Bradford Handon, 1920.

MONTANA: *Glasgow District* — Wm. Lindeke, 440; Elmer Hall, 2347.

Miles City District—J. A. Thornton, 320; Chas. W. McGill and others, 2504; J. H. Kirkwood and others, 2560; Walter B. Gilleland, 2480; Homer M. Johns, 2560; Thos. Connor, 2560; Geo. H. Rue, 1920.

Havre District—Arthur D. Sahr, 519; Geo. M. Stow, 2518; Nicholas Gould, 2560; Luther D. Hanberg, 2560; Archie Goodall, 2560; Jas. H. Bonner, 2560.

Lewistown District—Wm. H. Fox, 240; Grace L. Simpson, 120; Geo. Cram, 80; Andrew Green, 203; Adam Hoffman, 520.

NEVADA: *Carson City District*—Thos. B. Camp, 2560; Geo. E. Porter, 2560; J. C. Carmichael, 640; Fallon Pioneer Oil Co., 2560; Archie J. Allen, 1447; John Darns, 1600; Nev. Midway Oil Co., 320; Clifton T. Barker, 2560; Warren Harrison, 2560; Elmer W. Madden, 2560; Jennie E. Dwyer, 2240; J. C. Robertson, 560; Dorothy T. Harrison, 1920; Jas. M. Smitten, 320; Geo. Fuennan, 2560; John Daynor and others, 1280; Marion A. Dickinson, 640; Wm. Byrne, 2520; Jesse Roney, 2560; Mrs. E. J. Way, 2240; Wallace D. Alexander and others, 1582; A. T. Baker, 1920.

Elko District—Paul Clifton Doughty, 2560; Cons. Illipah Oil Co., 800; Nevada Oil Basin Co. Inc., 1600.

SOUTH DAKOTA: *Rapid City District*—Fred E. Dole, 400.

IDAHO: *Boise District*—Palener Wharton, 2240.

UTAH: *Salt Lake City District*—Walter F. Stafford, 120; E. F. Card, 2560; Sidney C. Hoel, 2560; Nelson H. Jensen, 2560; Anson W. Ferguson, 2557; Serge F. Bollis, Jr., 2480; G. C. Groce, 2560; J. A. Boshard, 2560; Wm. W. Byer, 2560; Bertha E. Dittmore, 2525; Harry B. Phelps, 160; E. P. Bean, 2560; A. F. Rath, 2120; Geo. T. Hansen, 320; Robt. M. Jones, 2560; Wm. C. Dill, 160; Jessie E. Sargent, 2320; W. A. Blackmore, 1520; Martha B. Wadley, 2560; Saml. S. Pond, 2560; Walter E. Speakman, 2560; A. F. Rath, 2560; H. L. Rath, 2560; Jessie Bailey, 1760; Daisy Robinson and others, 2560; Hyrum Leany and others, 1920; Geo. A. Williams and others, 2525; F. G. Martines, 2560; Daisy R. Crawford, 2560; Helen M. Morgan, 1360; Gertrude C. Strong, 680; David M. Ravity, 2560; Bingham Clegg, 2560; Lusk Pet. Co., 2560; A. B. Woodhouse, 415; E. J. Cannon, 2560; Maude E. Goddard and others, 992; Mrs. Jos. S. Snow and others, 440; Thos. L. Mitchell, 1360; Jos. H. Rayburn, 1280; Chas. A. Rice, 1200; Geo. T. Smith, 2560; Rewel G. Hester, 2400; Mathew Warner, 2046; Sam. H. Spears, 2560; W. H. Lowden, 2560.

Vernal District—Chas. L. Sparks, 2575; Edward S. Lawyer, 2560; A. E. Young, 2539; Davis Oil Shale & Ref. Co., 2327.

WYOMING: *Cheyenne District*—Boston Petroleum, 40; J. E. Trask, 1220; Wyo. Eastern Oil & Gas, 2560; Chas. B. Walker, 160; Francis L. Gern, 2560; Alameda Oil Co., 2400; John J. Robertson and others, 640; J. C. Rankin, 1480.

Buffalo District—Chas. A. Ackenhausen, 960; Richard P. Camden, 1918; John H. Howard, 1274; Roger G. Culbertson, 2400; John H. Cooper, 2035.

Newcastle District—McKinley H. Barbam, 80; John Safford, 320; Harry L. Marsh, 280; Jas. G. Stephens, 631; Jos. Saul, 80.

Douglas District—C. L. Holden, 2388; H. E. Gunde, 2360; M. W. Sanford, 2360; Continental Land Co., 900; W. F. Brennan, 80; Wm. A. Kingsley, 1278.

Lander District—Clyde H. Brown and others, 2560; Homer A. Hedgers, 1743; Old Faithful Oil & Gas Co., 1600; Anna D. G. Hough, 471.

Evanston District—Sedo Tunko and others, 1054; Lost Creek Con. Oil & Gas Co., 2557; Red Desert Oil Synd. Corp., 2558; Albert E. Ulter, 2539; Frank McVaugh, 2650; Hennan H. Green, 920; E. P. McGrew, 2125; Lionel H. Gray, 2567; Geo. Buhn, 1828; F. E Whitmore, 2560; L. W. Sargent, 2540.

HERCULES POWDER ACQUIRES AETNA EXPLOSIVES CO.

THE Hercules Powder Company at Wilmington, Delaware, has announced the acquisition of the Aetna Explosives Company, Incorporated, which consolidation was sanctioned by the stockholders of the Aetna on June 6. This marks the culmination of a transaction that has interested financial and business circles for the last two years.

By this purchase the Hercules company will acquire the plants of the Aetna company at Birmingham, Alabama; Emporium, Pennsylvania; Sinnamahoning, Pennsylvania; Ishpeming, Michigan; and Fayville, Illinois; two black blasting powder plants, one at Goes Station, Ohio, and the other near Birmingham, Alabama; a plant for the manufacture of blasting caps and electric blasting caps at Port Ewen, New York, and a plant for the manufacture of fulminate of mercury, for use in blasting caps, at Prescott, Ontario, Canada.

"With the Aetna company's business the Hercules Powder Company becomes a much larger factor in the explosives business of the United States," said J. T. Skelly, vice-president of the Hercules company.

"The company is now in a position to compete for business in all parts of the United States, and will be greatly strengthened in important fields which have hitherto been closed to us on account of freight rates from our plants.

"The reorganization will take place gradually. As in some cases we already have branch offices in cities where there is an Aetna office, consolidations will be necessary and new alignments of branch office territories must be worked out. It is our intention to retain as many members of the present Aetna organization as we consistently can, but obviously, one of the great advantages of this purchase will be the reduction in overhead which it will make possible. Ultimately the principal members of Aetna's office home organization will be transferred to Wilmington."

PERSONALS

JOHN J. HAAK, of Portland, Oregon, was in Washington on business June 17 to 20.

A. G. STROGER, of Portalnd, Oregon, was a caller at the Tax Division of the American Mining Congress in June.

A. CRESSY MORRISON and MR. O'SHEA of the Union Carbide Company were in Washington on matters pertaining to their company June 15.

E. B. KIRBY, chairman of the Mineral Laws Revision Committee of the American Mining Congress, consulted with Secretary Callbreath on June 15 regarding the work of this committee.

B. BRITTON GOTTSBERGER, formerly of Arizona, now of New York, was a caller at the offices of the Mining Congress June 25.

HOWARD F. WEIRUM, of Seattle, Washington, was a Washington visitor during June.

CHARLES A. MITKE, who has been delivering lectures at the Boston Institute of Technology, Cambridge, left New York early in June for his home in Bisbee, Arizona. Enroute he expects to visit several of the chairmen of the sub-committees of the general committee, metal mining branch of the Standardization Division of the American Mining Congress.

DR. HENRY MACE PAYNE of Andrade-Eyre, Incorporated, left the latter part of June to examine mining properties in Mexico. Dr. Payne was in Washington during the month to attend the meeting of the American Wholesale Coal Trade Association and to consult with the American Mining Congress in regard to the work of the committee on export coal, of which he is chairman.

COAL LEASING ADMINISTRATION

GENERAL PRINCIPLES in the laying out of coal leasing units were considered at a recent meeting of the Board of Coal Appraisal of the Interior Department. It was determined that the Secretary had the power under the Leasing Act to embrace in one leasing unit separated blocks of land which might, in conjunction with feehold blocks, be mined from the same opening. Consideration of whether the units might be laid out as the applicants desired, but with a view to the best working of the coal, led to the conclusion that the Secretary has authority to modify both leasing and prospecting regulations.

The question of whether the limit of acreage leased should be on the basis of tonnage rather than on the surface area was also discussed. It was agreed that the amount of coal mined was the real basis, and that each case should be determined upon its own merits. Specific leasing units heretofore laid out by the assistant engineers were discussed and, in general, approved.

TEXAS POTASH SIMILAR TO GERMAN

SPECIMENS of potash salts examined by the United States Geological Survey, Washington, and the Texas Bureau of Economic Geology and Technology, Austin, show percentages of potash which suggest at least the richness of that of Germany and Alsace. The samples were obtained from two borings about 80 miles apart, sunk by oil companies in the "Red Beds" region of Texas, where salt beds, red shales, gypsum, and other materials are associated in strata of nearly the same geologic age and general character as the potash-bearing beds of western Europe. The thickness of the potash-bearing beds in Texas represented by these samples is unknown, however, and the questions remain to be determined whether the deposit is thick enough to furnish potash in as great amount and of as high a grade as those in Europe, or whether it is of scientific interest only and mainly important as showing that potash-rich salts were actually deposited in this region and that other borings in areas where similar beds occur may discover commercial deposits.

LITHIUM MINERALS, 1920

THE production of lithium minerals in 1920 was confined to shipments of lepidolite from the Stewart mine at Pala, San Diego County, Calif., and spodumene from the Etta and Swanzey mines near Keystone, Pennington County, S. D. The lepidolite was used in the manufacture of glass and the spodumene in the manufacture of various chemicals. The total quantity of these two minerals reported to the United States Geological Survey as used for manufacturing purposes in 1920 was 11,696 short tons, valued at $173,002; in 1919, 6,287 short tons, valued at $115,000.

DR. MANNING AND DR. COTTRELL LEAVE FOR EUROPE

TWO FORMER DIRECTORS of the United States Bureau of Mines, Dr. Van H. Manning and Dr. F. G. Cottrell, left June 14 for Europe to do special investigative work. Dr. Manning is director of research for the American Petroleum Institute and Dr. Cottrell is chairman of the division of chemistry and chemical technology of the National Research Council.

SLATE VALUES REACH PEAK

THE YEAR 1920 was the most successful one on record for slate quarriers. Geological Survey figures show that the value of the year's production was $8,726,442.

This value does not indicate any decided revival in the slate industry as a whole, however, as may be seen in the fact that the quantity of roofing slate sold, 396,230 squares, was only eight percent more than that of 1879, the year of poorest business, and more than 72 percent less than in 1902, the year of largest recorded sales. But prices obtained last year made up for all other shortcomings of the market. The average price per square was $8.90, where the price in 1879 was only $3.35 and that of 1902 was only $3.45, a gain of only ten cents in twenty-three years.

Exports of roofing slate in 1920 were valued at $49,621 and imports at $4,512. General industrial conditions in the entire industry were considered better than during the four preceding years. Wages were high, but there were no general strikes, and price advances covered increases in cost of labor and coal.

Demand for mill stock was good, many orders not being filled on account of labor and railroad conditions. Blackboard and structural slate was also in good demand, but a scarcity of each was brought about by the poor demand for Pennsylvania roofing slate, which must be removed before the structural rock can be worked. A feature of the industry during the last few years has been the increased use of crushed slate granules as a surfacer for prepared asphalt roofing.

OIL SHALE RETORT REPORT

NUMEROUS INQUIRIES received by the Bureau of Mines from individuals desiring to make their own assays of oil shale while out in the field, and others from commerical assayers and research men, have been answered by the Bureau of Mines in the form of a technical paper prepared by L. C. Karrick, oil shale technologist of the bureau. The paper is known as Serial 2229.

Co-operating with Mr. Karrick were M. J. Gavin, refinery engineer, J. J. Jakowsky, petroleum engineer, and L. A. Anderson of the University of Utah. Construction and use of the retort selected by the Bureau of Mines for its field and laboratory work are discussed in detail.

IMPARTING COLOR TO GEMS

IF EXPERIMENTS now being carried on at the Reno station of the United States Bureau of Mines are successful, it will be possible to give color to colorless gems which exist in abundance in the west. The experiments so far have produced results which are considered promising.

The penetrating radiation of radium is the agency through which gems are being colored. In a preliminary experiment, a colorless Colorado topaz was tinted yellow. The coloring when exposed to light was found to be not permanent, and the experimentation continues with a view to making the color light-proof.

Successful termination of the experiments would add materially to the value of western gem stones, whose market value is low on account of their lack of the tint qualities deemed essential by gem manufacturers.

GEOLOGICAL SURVEY NOTES

G. F. LOUGHLIN has been relieved of administrative duties in order to complete his Leadville monograph. During his absence R. W. Stone is in charge of the division of mineral resources and J. P. Dunlop is attending to Mr. Stone's regular duties.—G. W. Stose returned June 17 from field work in the Big Stone Gap area for the Virginia Geological Survey. While there he conferred with Mr. Giles, of that Survey, in regard to the Geology of the Pennington area.—W. C. Alden and J. T. Pardee left June 23 for Lewistown, Mont., where they will resume work on the glacial and physiographic history of Montana east and west of the mountains, respectively. Before resuming this work Mr. Pardee will make a brief examination of groundwater resources in the vicinity of Townsend, Mont.—J. G. Gillson, assistant geologist, is to assist Edward Sampson in a geologic reconnaissance of the region south of Lake Pend Oreille, Idaho. They will probably start for Idaho late in this week.—Gail F. Moulton joined W. T. Thom, Jr., in Miles City, Mont., June 13, when they started for Hardin, Mont., where they will make oil and gas investigations in the Crow Reservation.—Frank Reeves left Washington June 15 for Lewistown, Mont., to resume oil and gas work in central Montana. J. Gilluly has been appointed geologic aid and will join Mr. Reeves at Lewistown.—P. C. Benedict has been appointed geologic aid and left Washington June 16 to join R. C. Moore in oil and gas work in Garfield and Kane counties, Utah. W. W. Boyer left Washington June 14 and E. M. Spieker left June 16 for Salt Lake City, Utah, where they will outfit and proceed with work on the coal beds in the Wasatch Plateau.—C. R. Longwell resumed the mapping of the limestones and dolomites of western Connecticut, where he will spend the remainder of the month.—G. C. Martin sailed from Seattle June 17 to do geologic work in the Yukon and Koyukuk River basins.

WATER POWER APPLICATIONS, PERMITS AND LICENSES

RECENT applications for permit or license under the Federal Water Power Act filed with the Federal Power Commission are as follows:

No. 190. Small diversion dam in the Uintah River, in Duchesne county, Utah, a five mile conduit to forebay, one mile pen stock to power house on the Uintah River, a small diversions dam in Pole Creek and a two mile conduit leading to the above mentioned forebay, to develop 6,500 horse power, proposed by the Uintah Power & Light Co., care Charles Demoisey, Vernal, Utah.

No. 191. Two dams and two reservoirs storing 7,500 acre feet, with two short conduits and to power houses in Little Rock Creek, Los Angeles county, California, to develop about 4,800 horse power, proposed by the Little Rock Power & Water Company, room 307 Delta Building, Los Angeles, Calif.

No. 192. Transmission line across public lands in Inyo county, California, proposed by C. B. Johnson, care V. G. Preston, Bishop, Calif.

No. 193. Five small reservoirs in the headwaters of the north and south forks of Big Pine Creek, Inyo county, California, with a series of three conduits and three power houses along the stream below, a dam 73 feet high creating a reservoir one mile square to be constructed in Baker Creek and the water therefrom diverted over the divide into the conduit leading to the second power house on Big Pine Creek, developing 8,000 horse power, proposed by the department of public service of Los Angeles, Calif.

No. 194. Develop Rock Creek Lake as a reservoir to store 50,300 acre feet, conduit 7½ miles to power house on Rock Creek, in Mono county, California, head 1,723 feet, to develop 6,000 horse power, proposed by the department of public service of Los Angeles, Calif.

No. 195. Diversion dam in Sawmill Creek, and a two-mile conduit to a constructed power house on Division Creek, the water to be returned by a ditch to Sawmill Creek for users lower down, developing 1,300 horse power, proposed by the department of public service of Los Angeles, Calif.

No. 196. Two reservoirs in the headwaters of Cottonwood Creek, Kern County, California, storing 7,860 acre feet, two conduits and two power houses to be constructed on the stream below and just above the installed plant of the city of Los Angeles on Cottonwood Creek, to develop 5,000 horse power, proposed by the department of public service of Los Angeles, Calif.

No. 202. Comprehensive scheme of development in Green River from its confluence with the Grand River to the town of Green River, Wyoming. The applicant proposes to construct four power developments as follows:

Flaming Gorge Unit. Dam 300 feet high at Flaming Gorge, Daggett county, Utah, seven-mile tunnel and five-mile canal to power house, develop 152,200 horse power.

Ladore Canyon Unit at Ladore Canyon, Colorado. Rock fill dam 200 feet high and canal 40 miles to power house at Brush Creek, Utah, to develop 171,600 horse power.

Minnie Maud Unit located on Minnie Maud Creek, 50 miles above Green River, Utah. Rock fill dam 150 feet and canal 50 miles to power house at Green River City, to develop 408,800 horse power.

Stillwater Canyon Unit just below the junction of the Green and Grand Rivers. Rock fill dam 200 feet high, backing the water up to Green River, Utah, and up the Grand River into Colorado. Power house at the dam to develop 180,000 horse power. Proposed by the green River Power Company, Pacific Electric Building, Los Angeles, Calif.

No. 203. Transmission line two miles long across the Uncompahgre National Forest, Ouray county, Colorado, proposed by Thomas P. Mitchell, Ouray, Colo.

No. 204. Dam 50 feet high in the South Fork of Clearwater River, Idaho county, Idaho, conduit one fourth of a mile to power house, to develop 960 horse power. Will replace and drown out an existing power dam. Proposed by the Grangeville Electric Light & Power Project, Grangeville, Idaho.

No. 210. Dam and reservoir in south fork of Tuolumne River. Sec. 34, T. 1 S., R. 19 E., M.D.M., California; second dam and reservoir in Sec. 36, T. 1 S., R. 18 E., M.D.M., conduit from second reservoir to a powerhouse on main stream in Sec. 25, T. 1 S., R. 17 E., M.D.M., developing 1,000 horse-power, a diversion dam in the Tuolumne River at the power-house tail race, and 17 mile conduit to a second power-house at Ward's Ferry in Sec. 2, T 1 S., R. 15 E., develop 8,000 horse-power, proposed by the Yosemite Power Co., Groveland California.

No. 211. Application for license to use the power site at the U. S. lock and dam No. 5 in the Muskingum River at Lake Chute, Ohio, to develop 550 horse-power, proposed by Harry W. Deprez, Shelbyville, Indiana.

No. 212. Dam 34 feet high and 100 feet long at the outlet of an unnamed lake, and 36 inch wood stave pipe 1,800 feet long to a power-house at the head of Didrickson Bay, Chichagof Island, Alaska, proposed by the Hirst-Chicahagof Mining Co., 316 First Avenue South, Seattle, Washington.

No. 213. Diversion dam two feet high in Cann Creek, at the head of Lisianski Inlet, Alaska, and pipe line 1,000 feet long to a 75 horse-power air compressor. No electric power will be developed. Proposed by J. H. Cann, Box 281, Juneau, Alaska.

No. 214. Dam and power-house to be located near the mouth of the North Fork of White River, in Baxter County, Arkansas. The dam will have such a height as investigation proves economical. Proposed by the Dixie Power Co., Title Guaranty Building, St. Louis, Missouri.

No. 215. One or two large dams and powerhouses in the Klamath River in Klamath County, Oregon, developing 94,000 horsepower. The proposed development will affect a stretch of the river about ten miles long from Sec. 31, T. 39 S., R. 7 E., to Sec. 8, T. 41 S., R. 6 E., W. M., proposed by the California Oregon Power Company, San Francisco, California.

No. 216. Conduit 3,100 feet long from present diversion dam in the Merced River, in Sec. 22, T. 3 S., R. 19 E., M.D.M., to a power-house developing 500 horse-power. This plant will supersede a small existing plant. Proposed by the Original Mining and Milling Company, Merced, California.

No. 217. Diversion dam 40 feet high in Boulder Creek, a branch of the San Diego River, in Sec. 10, T. 14 S., R. 3 E., S.B.M., in San Diego County, California, and conduit 4½ miles to a power-house. Proposed by Ed Fletcher, 920 8th St., San Diego, California.

No. 218. A comprehensive development of available power in Pass Creek and tributaries, in Congarok Precinct, Seward Peninsula, Alaska. The entire development will have a capacity of about 40,000 horse-power. Proposed by the Saw Tooth Power Co., care Frank B. Colton, attorney, 256 Broadway, N. Y.

No. 219. Dam 100 feet high in the Middle Fork of Feather River, in Butte County, Montana, and conduit one-half mile long to power-house, to develop 1,700 horse-power proposed by Luther O. Griffith, Oroville, California.

No. 220. Low diversion dam and wood stave pipe line three quarters of a mile long to a water wheel developing about 100 horsepower, Middle Fork of Little Laramie River, Albany County, Wyoming, proposed by the Colorado Gold Mining Company, Centennial, Wyoming.

No. 221. Application for a license for a project in the Big Horn River in Sec. 4, T. 5 N., R. 6 E., Wind River Meridian, Fremont County, Wyoming. The dam is already built and the application is in direct conflict with the application of the Wyoming Power Company for the same project. Proposed by John T. Clarke, room 314, 503 Fifth Avenue, New York City.

No. 222. Comprehensive scheme for the development of power in Lewis River, Washington, by the construction of four diversion dams, conduits and power houses at the following points: below the mouth of Cedar Creek, above Cresap's Ferry, at Swift Creek and above the mouth of Muddy River, in Clarke, Skamania and Cowlitz counties, Washington, proposed by the Lewis River Hydro-Electro Power Company, 704½ Main Street, Vancouver, Washington.

No. 223. Low diversion dam, conduit, and power house at Sandstone Falls, New River, Raleigh and Summers Counties, West Virginia, to develop about 4,500 horse-power, proposed by Charles B. Hawley, 450 Munsey Building, Washington, D. C.

No. 224. Dam and power house at Kootenai, in the Kootenai River, in Lincoln County, Montana, to furnish power for a pulp mill at the confluence of the Yaak and Kootenai Rivers. It is planned to construct a second pulp mill at or near Kalispell, in the region of Flathead Lake, Montana. The company also proposes to construct a small power project at the mouth of the Yaak River. Total development will be approximately 85,000 horsepower. Proposed by the Kootenai Power Construction Company, 347 Madison Avenue, New York, N. Y.

No. 225. Development of power in Buffalo River, in Marion County, Arkansas, by the construction of a high dam to be located near the mouth of Panther Creek; a second dam will be built at the head of the pool created by the first dam. The two projects will probably develop 20,000 horsepower. Proposed by the Dixie Power Company, Title Guaranty Building, St. Louis, Missouri.

PRELIMINARY PERMITS.—No. 7, Virginia, Roanoke River Development Company, 318 Mutual Bldg., Richmond, Va. No. 20, Idaho, Utah Power and Light Co., care of M. O. Leighton, National Savings and Trust Bldg., Washington, D. C.; No. 48, Illinois, State of Illinois, care of The Governor, Springfield, Ill.; No. 81, North Carolina, Granite Falls Manufacturing Co., A. A. Shuford, Secretary., Granite Falls, Caldwell County, N. C.; No. 88, California, Merced Irrigation District, Merced, Calif. No. 113, Utah, Great Basin Power Company, Walker Bank Bldg., Salt Lake City, Utah; No. 121, Arizona, James B. Girand, care of Parsons, Klapp, Brinckerhoff and Douglass, 84 Pine St., New York City, N. Y.

LICENSES.—No. 104, Wyoming, Home Colony, care of L. R. Ewart, Cody, Wyoming; No. 126, Idaho, John R. Love and G. A. von Brecht, care of Mr. J. D. Fisher, Colorado Springs, Colo.; No. 192, California, C. B. Johnson, care of V. G. Preston, Bishop, Calif. No. 203, Colorado, Thomas P. Mitchell, Ouray, Colo.; No. 41, Alabama, Alabama Power Co., Birmingham, Ala.

METAL PRODUCTS ADD GREATLY TO NATION'S PROSPERITY

CALCULATIONS based on federal census figures published recently show that the value of the country's factory output practically tripled during the five-year period from 1914 to 1919. In 1914 there were 275,791 manufacturing establishments which turned out products valued at $24,246,435,000. By 1919 the number of factories had grown to 288,376 and the value of their products aggregated $62,588,905,000.

The mines contributed heavily to this increase in the value of the national factory output. The following are a few instances:

Copper smelting and refining establishments decreased from 37 to 33, but the value of products increased from $444,022,000 to $632,897,000.

Lead smelting and refining plants increased from 22 to 25; products from $171,579,000 to $192,655,000; zinc smelting and refining, 29 to 38; products from $53,538,000 to $103,103,000.

Metal smelting and refining, not otherwise specified, numbered 7 establishments and $13,996,000 worth of products in 1919; no figures for 1914.

Smelting and refining (not from the ore) establishments decreased from 84 to 81, but value of products from $39,902,000 to $50,246,000.

Aluminum manufactures increased from 37 to 84 and value of products from $19,597,000 to $69,474,000.

Babbitt metal and solder factories increased from 109 to 126 and value of products from $19,180,000 to $70,531,000.

Brass, bronze and copper products factories increased from 992 to 1122 and value of products from $162,199,000 to $487,707,000.

Chemical factories increased from 394 to 587 and value of products from $158,054,000 to $423,537,000.

Copper, tin and sheet iron work factories increased from 4,527 to 4,790 and value of products from $94,891,000 to $160,932,000.

Thirty-one ferro-alloys factories produced $40,640,000 worth of products in 1919; no figures for 1914.

Iron and steel blast furnaces increased from 160 to 195 and value of products from $317,654,000 to $794,467,000. Iron and steel, steel works and rolling mills increased from 427 to 484 and value of products from $918,665,000 to $2,812,775,000. Iron and steel, bolts, nuts, washers and rivets, not made in rolling mills, increased from 102 to 147 and value of products from $23,403,000 to $91,655,000. Iron and steel, cast iron pipe, 59 establishments both years; values of products increased from $26,659,000 to $50,235,000. Iron and steel, doors and shutters, 43 to 57; products increased from $5,181,000 to $10,877,000. Iron and steel forgings, not made in steel works or rolling mills, 191 to 240; products increased from $28,961,000 to $171,676,000. Iron and steel, nails and spikes, cut and wrought, including wire nails not made in steel works or rolling mills, 64 factories both years; products increased from $7,199,000 to $17,555,000. Iron and steel, case hardened, tempered or otherwise specially treated, including welding, 522 in 1919 with products valued at $11,030,000. No figures for 1914. Iron and steel wrought pipe, 36 to 51; products increased from $37,655,000 to $84,011,000.

Lead, bar, pipe and sheet, 27 to 31; products increased from $7,431,000 to $16,802,000.

Minerals and earths, ground or otherwise treated, 244 to 390; products increased from $10,307,000 to $43,692,000.

Oil, 181 to 278; products increased from $38,040,000 to $160,431,000. Petroleum refining, 176 to 304; products $396,361,000 to $1,644,684,000.

Steel shipbuilding, 79 to 159; products from $66,217,000 to $1,454,116,000. Steel, car and carriage springs, not made in steel works or rolling mills, 84 to 125; products from $11,595,000 to $57,150,000. Portable steel barrels, drums and casks, 34 with products valued at $24,943,000; no figures for 1914. Structural iron works not made in steel mills or rolling mills, 1235 to 1147; products $159,378,000 to $304,961,000.

Sulphuric, nitric and mixed acids, 32 to 39; products from $15,215,000 to $31,470,000.

Tin plate and terneplate, 31 to 23; products from $68,343,000 to $97,399,000.

UNIONS AND UNDER-PRODUCTION

SO MANY of industry's short-comings have been traced in recent months by the press to the labor unions, so much of the prosperity of the nation dependent upon the attitude of labor organized and unorganized, that the comment recently made in *Iron Age* upon prosperity and union methods is of more than usual interest. It reads as follows:

"If all the tailors unite to make one-half as much clothing as formerly, if all the furniture factory workmen arrange to produce one-half as much furniture, if the artisans in the building trades bring it about that houses are erected at one-half the former speed, measured in man days—if such a thing is done by workers all along the line, the people have so much less prosperity and advancement. It does not matter an iota, considering the thing collectively, what the rates of wages are or the prices or costs of things. The people cannot enjoy things if they are not brought into being.

"The practice of unionism has been to multiply the number of jobs and reduce the amount of service performed in a day. The loss must be borne by someone. It cannot be borne by the employer's profit. The workman may think so when excited by the soap box orator, but an analysis of the total paid in wages and salaries and of the total of actual profits susceptible of diminution without throttling industry would show such an extreme disproportion that the futility of the ambition would be apparent.

"When, however, the proportion of all industry that is dominated by unionism is small the unions have all the other workers as the field for the exploitation. At the present time the members of union are about one-tenth of all the workers. If the proportion were reversed the progress would not work and the e would be industrial decay."

ENGINEERS WIN DAMAGE SUIT

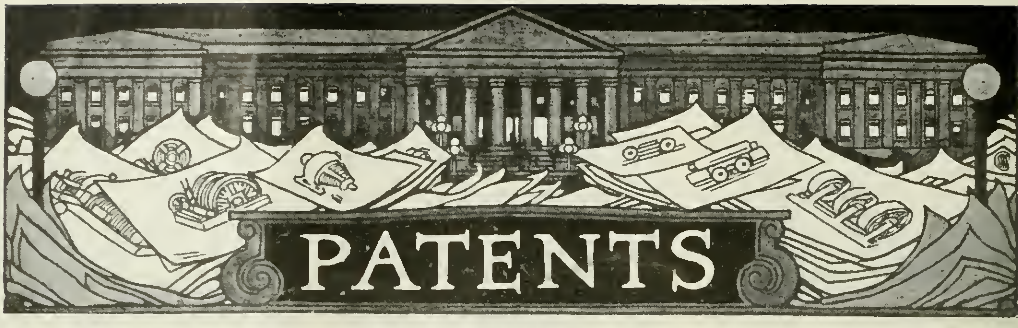
ON THE GROUND that they acted within the scope of their official duties in making to the Secretary of the Interior an adverse report upon the plans of J. H. Levering, hydraulic engineer, for the utilization of the waters of the Potomac River above Great Falls, a few miles from Washington, the District of Columbia Supreme Court sustained the demurrer to the $25,000 damage suit brought by Levering against N. C. Grover, chief hydraulic engineer; John C. Hoyt, C. C. Stevens and R. W. Davenport, engineers of the U. S. Geological Survey; E. C. Bobb and Charles A. Bissell, engineers of the Reclamation Service; W. M. Read, chief irrigation engineer of the Indian service, and Herman Stabler, chief engineer of the Geological Survey. The court dismissed the suit.

The defendants also attacked the case of Levering on the ground that he had failed to show in his pleadings that his plans would have been accepted even if the adverse report had not been made.

HOW TIMES HAVE CHANGED

FORMERLY, to amass riches was to run the risk of political ostracism. Only a few short years ago "big business" was under a stigma, more or less, and few office holders would consider for a moment taking council with a banker, for to do so would have given their prospective opponents much "thunder" to use against them in the campaign for re-election. But it is different now. Democracy is becoming more real. The West Virginia *Mining News* prints the following observations from its correspondent at the capital:

"Recently the newspapers carried the story that President Harding had discussed certain financial and loan policies with a number of prominent bankers at the White House. The conference was preceded by a dinner and the guest list was composed of men of sound experience in the industrial world. How times have changed! This brings back an incident of several years ago—we do not need to be specific—when a group of bankers went to Washington to consult with the President, and were informed by his Secretary that he would not see them. On the same day these bankers had asked for this conference, a number of union leaders were received at the White House and spent much time in discussing their affairs and plans. Times certainly have changed for the better. Our President is not afraid to meet men of every class. In fact, he recognizes no class, and the banker is to him an American citizen, who is doing his best to bring order out of the chaos precipitated by the war and its aftermath. He meets the financier and the workmen on the same plane. He patronizes neither, and he does not seek prestige from either. President Harding apparently understands that he is the President of all the people, and he also recognizes the fact that we are confronted today with a great financial crisis in which the intelligence and training of bankers is a necessary factor in the solution. This is as it should be, and it is reassuring to note that all sorts and conditions of men may visit the White House provided they have actual business, that they will be accorded a hearing, and their representations given the necessary consideration.



Conducted by John Boyle, Jr.

1,370,601—*R. Luckenbach*, Philadelphia, Pa., assigned to Luckenbach Processes, Inc., March 8.

Apparatus for Concentrating Ore using gravity separation, and a porous body comprising material to which the mineral values will adhere and means for exerting air pressure on the pulp for forcing it through the porous body.

1,370,843—*R. E. Sayre*, Pittsburgh, Pa., assigned to Metals Recovery Co., March 8.

Flotation Process comprising adding to the pulp a small amount of a ketone condensation product.

1,370,904—*N. A. Nevlick*, Columbus, Ohio, assigned to J. E. Jones, March 8.

Loading Machine more particularly intended to load coal in the mine into the mine cars. A primary object of the invention is to provide a single unit loading machine of the character indicated, constructed in such manner that the discharge end of the gathering conveyer may be maintained in operative position with respect to the mine car, even though the truck of the loading machine and the mine car may be located upon a sharp curve. In machines of this character it is necessary to provide sufficient overhang of the gathering conveyor at the rear of its supporting truck to permit the mine car to be manipulated therebeneath to distribute the load evenly within the mine car. It is apparent that with sufficient overhang to permit the manipulation of a mine car of even moderate length beneath the discharge end of the conveyer, such discharge end will, if the curvature of the track is such as to cause the truck and the mine car to lie at an angle with respect to each other, tend to move laterally beyond the track and consequently beyond the mine car.

The present invention contemplates the provision of a single unit loading machine in which means are provided for permitting the support upon which the gathering conveyer is pivotally supported from its truck, to be shifted bodily laterally to compensate for the tendency of the discharge end of the gathering conveyer to move laterally beyond the mine car under the conditions set forth, whereby such discharge end will be maintained in a position to discharge into the mine car, irrespective of how sharp the curve may be upon which the work is being done.

1,371,314—*N. D. Levin*, Columbus, Ohio, assigned to Jeffrey Mfg. Co., March 15.

Mining Machine particularly of that class which is provided with an elongated cutter arm adapted to be thrust longitudinally into the coal and to then be moved laterally across the face to under cut the coal preparatory to breaking it out of its natural bed.

The special object of the invention is to provide, in a machine of the class described, improved gearing and arrangement of parts which shall combine maximum efficiency with extreme convenience of operation.

1,371,344—*J. C. Brackett*, Chicago, Ill., assigned to Middlemiss and Brackett, March 15.

Shoveling and Loading Machine adapted to work in mines having restricted head room, of the swinging lever type adaptable for overhead or lateral delivery of material which, while illustrated in a hand-operated embodiment, may readily be arranged for automatic action. The operating cylinders are connectible in various manners to permit alteration of a given machine for separate conditions of operation, and for permitting manufacture from a nearly standard design of a varied line of apparatus comprising types of quite different characteristics, each adaptable for different classes of work.

1,371,345—*J. C. Brackett*, Chicago, Ill., assigned to Middlemiss and Brackett, March 15.

Shoveling and Loading Machine comprising a motor mounted on a carriage and operating the shovel to cause it to make a reciprocating digging stroke followed by a load delivery stroke.

1,371,409—*A. Christensen*, Stockton, Calif., March 15.

Concentrator particularly intended to be used when extracting the metals from sand, gravel and the like, with the aid of a stream of water and for use in eojunction with the ordinary water filled sluice box.

1,371,503—*P. H. Mack*, Bradford, Pa., assigned to Oil Well Supply Co., March 15.

Well Packer.

1,372,500—*J. F. Gamille*, Frederick Town, Pa., March 22.

Mine Ventilating Appliance.

1,372,743—*B. F. Gardner*, Chicago, Ill., March 22.

Means for Liquifying Gummy Residues in Oil Bearing Strata, comprising electrodes located within the tubing of a plurality of oil wells and means to connect said electrodes in series whereby electric currents will be caused to pass from one well to adjacent wells.

1,372,775—*O. G. Petersen*, Somerset, Ky., March 29.

Shaker Screen Apparatus. It is an object of the invention to provide certain improvements in the permanent supporting structures or frameworks for the moving parts of coal mine shaker screens and other vibrating apparatus, whereby a sufficient mass will be provided at a minimum expense to counteract, overcome or absorb the effect or action on the supporting framework due to the vibration or movement of the moving parts carried thereby; and whereby maximum strength, durability and permanence of the framework will be attained with easy accessibility to moving parts.

The invention particularly contemplates the provision of an improved concrete supporting framework for apparatus to rapidly handle the large output of coal from the mines and usually to receive coal from a tipple, and screen and size such coal and deliver the same into railroad cars or other vehicles movable beneath the apparatus.

1,373,147—*L. Petroff*, Burgettstown, Pa. March 29.

Mine-Switch. This invention has as its object the provision of means whereby the switches of narrow-gauge railroads, such as are used in large factories, mines and the like, may be operated from an advancing car without dismounting or exertion of an attendant.

A further object is to provide means whereby a visible signal is displayed showing that the track ahead is in clear condition, or the reverse.

1,373,820—*J. W. Jones*, Cannock, England, Apr. 5, 1921. Assigned to Haslam & Stretton, Ltd.

Miners Electric Safety Lamp.

1,373,842—*T. Stretton*, Cardiff, Wales, Apr. 5, 1921. Assigned to Haslam & Stretton, Ltd.

Miner's Electric Safety Lamp.

1,374,410—*M. Jorgensen*, Frederiksberg. Denmark, Apr. 12, 1921. Assigned to F. L. Smidth & Co., New York.

The present invention has for its object firstly to limit the function of the mill to its real specialty, the crushing, and secondly to fit up the sifting system for separating off the sufficiently crushed material in such a way that the sieve will actually act as the desired regulator for the crushing fineness.

For the first purpose the mill is furnished with an outlet bottom having peripherically arranged slits through which the material leaves the mill without having been sifted as soon as it has traveled through the drum, and for the second purpose, the attainment of an efficient sifting action, a special arrangement has been made by means of which the material is led onto a sieve and back from the same by various paths in a continuous course, a circulation being arranged from the mill through a sifting drum and by another path from this back to the mill.

1,374,422—*G. A. Bragg*, Thompson, Nevada, Apr. 12, 1921. Assigned to Texas Gulf Sulphur Co.

Method of Recovering Sulphur From Its Ores, which comprises heating an ore pulp made up of a mixture of the finely divided ore in a suitable liquid medium, to the melting point of the sulphur contained in the ore pulp, agitating the mass so as to cause coalescence of individual melted sulphur particles into aggregates larger than the gangue particles, solidifying the sulphur aggregates thus formed, and ultimately separating the solidified sulphur from the gangue.

The

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WHEN THE WHOLE WORLD KNOWS YOUR BUSINESS

THE BUSINESS MAN'S WORLD is peopled by two classes of citizens—his customers and his competitors. His first, last and intermediate aim in life is to cultivate and retain the confidence of the former and keep the latter guessing how he does it. If your competitor knows your business—your resources, your methods, your financial troubles, your successes and failures—he can easily cut into your trade and may in the long run annex it or destroy it.

If the directors of a corporation invited the president of their chief competitor to sit at the table during their annual meeting, they would soon have nothing to direct. Either their stockholders would see to that, or the competitor would. If the stenographer who wrote the minutes furnished a copy of the transcript to a competing house, his name would at once be amputated from the payroll. The typical business man would no more think of permitting either to be done that he would of letting the house across the street install a dictograph upon his desk.

No, the typical business man would not permit any of these things, but thousands of business men are doing what amounts to the same thing in the end. Every business man in the United States who is not fighting the coal regulation bills, fighting them in his local chamber of commerce, in political meetings, at social gatherings, through the newspapers and in letters and telegrams to his Senators and his Congressman, is merely closing his eyes and refusing to take note that his competitor is preparing to sit in at his annual directors' meeting or read the minutes or peruse the records of the dictograph. The passage of these bills would but mark the beginning of a long series of enactments applying similarly to any and every business under the American sun, and every business man must know, or be told if he does not already know, that the one inescapable result of their operation would be to make it possible for his competitor to learn all about the secrets of his business.

One of the two coal measures makes compulsory the disclosure of all vital information pertaining to the mining, selling, storing and distribution of coal. Manifestly, the giving of such information by any producer will involve making known the innermost secrets of his business, including those priceless secrets of organization, methods and management which have accomplished success for perhaps half a century and the disclosure of which to competitors may mean the crippling or the destruction of his enterprise. Of course the proponents of these measures are loud in their protestations that all such information will be kept in the secret archives of the government and cannot be used against the producer, but in practice this will not be the result. The fact is—and those who advocate these measures wisely remain silent on this phase of the matter—that the information will be collected for the government by an army of men who work for moderate salaries in the expectation of cashing in later. They know that after becoming walking encyclopedias of other people's affairs they can go into business as consulting experts or accept private employment at several times the pittance which the government pays them.

This has been the history of all government bureaus up to date. Washington is filled with "experts," and hundreds of commercial houses carry on their payrolls high-salaried trade "advisers," whose only function is to hand out wisdom based entirely on their knowledge of other people's business acquired in reading "secret" reports while in the employ of the government.

No, the government will not divulge the returns of the coal producers, but the government cannot prevent, and will not even attempt to prevent the men who familiarize themselves with these returns from accepting private employment. Hence, every business man who objects to throwing his books wide open to his competitor should fall into line with the miners and help kill the coal regulation bills and every other measure looking toward government nosing into private affairs.

THE BRITISH COAL SETTLEMENT

NOTHING BUT LOSS results from interrupting the orderly processes of production and distribution or interfering with the law of supply and demand. A wholesome object lesson is afforded by the recent British coal strike, the principal results of which are:

Government emergency expenditures totalling $100,000,000.

Maintenance for several weeks after the strike of a defense force costing $250,000 every day.

Seventy million working days lost.

Loss in production of 52,000,000 tons of coal, serious damage to England's export trade, general industrial depression, destruction of many mines.

A grant of $50,000,000 subsidy to the mine workmen.

Standard minimum wages fixed at twenty percent above the 1914 level.

Standard profit of the mine operators to be limited to 17 percent of the aggregate amount of wages paid, and of the surplus profit above that point 17 percent to go to the owners and 83 percent to the union.

The only showing of gain made by either side is seen in the clause granting increased wages and sharing of profit to the mine workmen. But 20 percent over the 1914 wage level is not a great increase, and it is doubtful if there will be any profits to share. The British coal mine employe's annual output has decreased from 246 tons in 1913 to 184 tons in 1920, or 25 percent. His latest wage increase will enable him to become nearly

25 percent less efficient and still draw the same amount of wages which he received between 1913 and 1920, and from his past conduct it is reasonable to infer that that is exactly what he will do.

Coal is the foundation of Great Britain's business structure. The surrender to the mine workmen was made to stave off national chaos. But the terms of capitulation were such as Lenine or Trotsky might have written, and they carried Great Britain nearer to the abyss of bolshevism than any nation except Russia has yet approached. Another strike, another similar "victory" for the strikers, and Great Britain will be over the brink and into the abyss.

A CLOSED BARGAIN

THE GOVERNMENT DOES NOT PROFITEER. It does not break faith with its citizens or with its allies and it does not repudiate its contracts. Therefore it will not repeal the Pittman Silver Purchase Act.

When the act was passed a silver famine was threatened in India. A famine would have meant a revolution and a revolution probably would have resulted in the loss of the war. Great Britain wanted silver and wanted it badly and was willing to pay any price to get it and appealed to the United States to help her in the emergency.

The price of the metal was above a dollar an ounce, but American producers were prevented by an embargo from taking advantage of the world market. There were in the United States treasury 450,000,000 silver dollars, minted at a time when the price of silver ranged about fifty-five cents an ounce. For the government to have sold any part of this huge supply for more than one dollar an ounce and to have retained the profit, at the same time shutting American producers out of the market, would have amounted to profiteering of the worst order imaginable. It would have been as if the governmen had embargoed all private commercial transactions with the Allies and had purchased the output of the canning factories, the clothing mills and the ammunition plants at ridiculously low figures and sold them to the British government at the top of the war market. Therefore the Pittman law provided that for every silver dollar melted and sold as bullion to Great Britain (the number was not to exceed 350,000,000) at or above $1 per ounce there should later be purchased from American producers an ounce of silver at $1 per ounce. The Secretary of the Treasury urged the law as a war measure, the silver producers agreed to it, Congress passed it and the mint has since been making purchases under its provisions. It is a continuing measure which must be enforced until the last of its provisions is carried out; a contract which, having been fulfilled by the American producers and Great Britain, must needs be fulfilled by the other party, the government of the United States.

These facts ought to be generally understood, but they are not, as is evidenced by sporadic instances of the advocacy of its repeal. Within the last few weeks a daily financial publication of New York City has urged the repeal of the measure, asserting that purchases thereunder constitute a drain upon the treasury and increase the floating indebtedness, that the act itself placed silver producers in a favored position by permitting them to lean upon other taxpayers, and that silver miners ought to go to work building railroads or public highways or doing something else of a useful nature. A little more knowledge of the act itself would convince its critics that it has never cost the government one cent, and never will; that Great Britain is footing the bill, and that as a matter of fact the government makes a net profit out of every transaction arising under the Pittman law. The government is collecting interest on deferred payments upon the melted coinage, and when the final payment is paid the government will still have the advantage of using some of the money until the last ounce of silver withdrawn during the war is replaced by purchases from American producers.

Had every government incursion into the realm of business during the war been made with precautions as wise as those which attended its manipulation of the silver situation, our national indebtedness would be much smaller than it is. The taxpayers paid for the Food Administration and the Fuel Administration and are still making good the guarantees to the railroads and meeting the deficits of the Shipping Board. The Pittman law accomplished its purposes more speedily and more completely than any other war enactment and was the only one which did not require a bond issue.

Suggestions for repeal of the Pittman Act are out of order. Its unfulfilled provisions constitute a contract between this government, the British government and American producers of silver. Any suggestion that the Congress of the United States convert a contract into a scrap of paper will always be out of order.

COMMUNISM IN AMERICA

NATIONALIZATION of the mines has been openly advocated ever since the Plumb plan was first proposed by railroad employes. THE MINING CONGRESS JOURNAL heretofore took formal notice of the trend of activities in this direction and notified those affected to be on their guard.

Evidence that the United Mine Workers of America demands for its members the "full social" value of the output of the coal mines was adduced at the Senate inquiry into the West Virginia situation and was not refuted. The "full social value" means the entire gross receipts except the expense of transportation. If the United Mine Workers' doctrine is ever put into effect, the operators will be deprived of all return upon their investment and refused even a laborer's wage for their managerial efforts.

The Amalgamated Clothing Workers have just won a victory, in that in New York City some of the leading manufacturers have surrendered to their demands. In the words of one of the manufacturers, there was no strike, no question of hours or wages, but an "open warfare between a powerful revolutionary organization and the very substance of American liberty." This organization had become so radical that even the American Federation of Labor could not endorse its aims and methods. It received open encouragment from Moscow and Petrograd, and yet its members, numbering 180,000 and grouped principally in eight leading cities, can now boast of a victory over employers in the nation's largest metropolis.

While the country as a whole is in no immediate danger from a physical effort to transplant sovietism to its shores, the success of bushwhacking methods in isolated localities and the continuance of communistic propaganda by national organizations must not be permitted to pass unnoticed. No employer would be abridging the constitutional rights of all citizens by refusing to employ, or retain within his employ, any workman who preaches sovietism or belongs to an organization which stands for communism, directly or indirectly, at once or ultimately.

RETRIBUTIVE JUSTICE

WE reap what we sow. Labor unions are finding this out much to their own discomfort. Repudiation of contracts, rebellion against just authority, failure to appreciate the mutuality of the relations between employers and employes, which were such marked characteristics of labor's attitude during the war and the two years following, are all being brought to the attention of the unions now. It appears that employers everywhere are revolting against the tyranny of labor leaders and taking the reins of their own businesses into their own hands.

In an address before the Pennsylvania Bankers Convention early in June, James M. Beck, Solicitor General of the United States said:

> "Go all through this world and everywhere you will find, not only in government relations but in all walks of life, the challenge to authority, the denial of leadership, the refusal to obey. The whole world is suffering as the Russian army suffered in 1917, when it went to pieces . . . through the spirit of insubordination."

This statement and the situation outlined in the opening paragraph prompted the Mechanics and Metals National Bank of New York to include in its monthly financial review the following comment:

> "Experience has shown that organization to secure and maintain the rights of men who toil with their hands is justified and that it will go on; but experience has also shown the vicious consequences of the usurpation of labor authority over the authority of management and capital."

It is not necessary to go to Russia, or England, or Italy, for verification of these statements. Although there are in this country millions of men, thousands of whom belong to the unions, who believe in giving an honest day's work for an honest day's pay, who hold all contracts sacred and recognize that only through arduous years of labor and economy can a plane of affluence and independence be reached, there are many, far too many, who think otherwise and demand a shorter cut. Witness the situation in Kansas, where seven-hundred strikes in violation of contract were called in one year. Witness the taking of "vacations" by the switchmen and the printers and the mine workmen in several fields. Witness the abrogation of agreements during one year by mine, metal and steel workmen, longshoremen, plumbers, plasterers, street car conductors, bricklayers, teamsters, cement finishers, bakers, hat makers, electricians, cigar makers, stone cutters, clerks and day laborers. Everywhere, observers of contemporary events are familiar with under-production and faulty production, flagrant breaches of faith and groundless discontent upon the part of organized workmen.

The fruits of such folly are seen in housing shortages, transportation failures, fuel famines, needlessly high costs of living and the fall of the labor organizations into general disrepute. The latter result is more significant and more enduring than all the others, for neither the employers of labor nor the consuming public can be induced to place confidence in the contract made today by the union which broke a contract last year or the year before.

A state labor leader is sentenced to jail for violation of a court order. He receives no sympathy. The printing trades unions demand a forty-four hour week and call down upon their heads the wrath of the few newspapers and magazines which were friendly. Railroad workmen demand continuation of little work and big wages and wonder why the consumer, who stands the expense, fails to second the demand. Musicians frame up such impossible working conditions that one western city disbands its wonderful symphony orchestra and an eastern metropolis dispenses with the concord of sweet sounds in its moving picture theatres. These may be unimportant instances in themselves, but each is typical, a sign of the times, an infallible indicator of the grasping proclivities of the labor unions and the swelling resentment of employers and consumers.

What will be the net result of it all? The open shop. The unions, denying to employers the right to manage their own affairs, denying to others the right to work, denying to the public the right of enjoyment of unrestricted output of the necessities of life, became as conquering invaders seeking to fasten the yoke of minority control upon the majority of a free people. It was inevitable in such circumstances that the public should fight back. The few cannot rule the many, and in this country the many were and still are outside of the unions. Hence the growth in public favor of the open shop movement.

There is no nation-wide, organized movement for the establishment of the open shop. The open shop is a weapon of defense. Naturally, it is popular with the masses, because it is a fair weapon, an American weapon, the only weapon suitable for repelling the onslaughts of organized tyranny. The unions are reaping what they sowed.

BUDGET SAVINGS

THE MINES WILL HELP the President and the Budget Director in their laudable undertaking to reduce government expenditures to the minimum. In the table of savings to be effected by holding expenditures for the current year to a point less than has already been provided for by Congressional appropriations, the figures relating to the Interior Department are found near the top of the list. Secretary Fall has consented to a reduction of approximately twenty million dollars. This saving, undoubtedly a record for this or any other government, will be exceeded only by that of the Treasury Department, with its thirty-million dollar cut.

The mines are glad to help. Even as they held their last man and their last dollar at the disposal of the government during the war, so are they now willing to co-operate to the limit in effecting reconstruction. Not an operator, not a newspaper or magazine at all representative of the mining industry will be heard to criticize the enormous diminution in contemplated expenditures of the Interior Department, in which the governmnent's activities affecting development of the country's mineral resources are centered.

If, as contemplated by the President, the institution of the budget system is to be contemporaneous with the discontinuance of the practice of making deficiency appropriations, the fiscal reform of the first year of the new administration will be greater than those of all the years which have gone before. No private enterprise could escape bankruptcy if its department managers regularly exceeded the limit of expenditures set by the directors and created debts to be met by assessments upon the stockholders. But that is precisely what some of the department heads of the government have been doing year after year. After all, the government is a big business corporation, and the President has the endorsement of all of its one-hundred and five million stockholders in his determination to protect them from extra annual assessments. In every step he takes for the introduction of business methods into the government, he can rely upon the whole-hearted co-operation of the mining industry.

EARLY TAX REVISION

THERE MAY BE DOUBT as to what the country most wanted from Congress last March, tariff legislation or tax revision, but there is no room for doubt as to what it wants now. It wants tax revision, with a great big capital "R", and it wants it so bad that it is not giving very much thought to anything else.

Few people, if any, cherish any false hopes. In the flush of optimism which followed the change in administration many undoubtedly thought their troubles at an end, but leisurely reasoning induced by past business depression and careful consideration of our national fiscal policies has brought about a general recognition of the fact that the tax burden can only be shifted, not lifted. Those who paid taxes last year will pay taxes this year. But how, and in what amounts, and what will be the method of assessment calculations?

It is practically conceded the excess profits tax will be repealed. Some other levy will be resorted to. But will it be distinctly, unmistakably, another tax, or merely the same thing under another name?

Will the haven of refuge now offered by tax-exempt securities be abolished? The outlook for new development, for enterprises in need of additional capital, will remain uncertain until Congress remedies this evil.

Will the petty "nuisance" taxes be obliterated altogether or will they be succeeded by others less vexatious to the consumer but requiring a new system of accounting more expensive and annoying still to the merchant?

Where will exemptions start and end? Where will the graduated scale begin to bear too heavily, and at what figure of gross return will it be necessary for the going concern to leave all hope of further net profit behind?

Business, little business as well as big business, waits upon the answer to these questions. It wants to know, and has a right to know, exactly where the burden will fall. Congress alone can tell and the country is impatient for the answer.

Stocks of retailers have become exhausted and must soon be replenished, for the public is ready to resume buying. City dwellers are impatient at the housing shortage and building corporations are anxious to relieve their anxieties. Liquidation has run its course. The tide of the general depression has turned. Irrespective of when the tariff law may be finally enacted, it is already possible to form a fairly accurate advance estimate as to its provisions. The main barrier to the resumption of business is the delay in federal tax legislation. Given prompt action by Congress in this regard and business will begin to go forward by leaps and bounds.

THE PENNSYLVANIA ARTHRACITE TAX

UNNECESSARY, discriminating, prejudicial to the consumers pocketbook—these and other similar terms may be applied in all justice to the tax levied on anthracite by the state of Pennsylvania. For a consideration ranging between seven and ten million dollars, Pennsylvania has invited the ill will of all those who believe with the Continental Fathers that no tariff barriers should be erected between these free and independent states. A very bad bargain.

There was no need for the tax. Pennsylvania was not suffering for lack of sufficient revenue. The old stratagem of requiring an "inspection" and collecting a fee therefor would have been so patently unjustifiable that it was not even resorted to. It was just another instance of taking toll where the possibility of doing so existed, a custom long popular in Europe but which everybody hoped would never be followed in this country.

The United States Bureau of Mines maintains at Pittsburgh its best equipped experiment station. In co-operation with the operators, the station's experts have contributed their best efforts toward reducing the cost of anthracite production, and with conspicuous success. The new tax counteracts to a limited degree the benefits of years of scientific research and practical experimentation. The consumer will pay the tax and the miner will carry an added opprobrium which he has done nothing to incur.

A Congressman from New York has requested his Governor and the Attorney General of the United States to take steps to annul the Pennsylvania enactment. Massachusetts is preparing to take action on her own account. The tax will have to run the gauntlet of the Pennsylvania courts. If it can be demonstrated that it is legal and enforcible, then by the same token it should be constitutional for the South to tax cotton, the West to tax wheat and every county in the land to levy a tariff on the milk and butter sent to adjacent cities. Then neither the producer, the distributor nor the consumer in America would be any better off than the dwellers in the Balkans, where every water-shed is a tariff wall and every cross-roads has its custom-house.

LABOR SLUSH FUNDS

THE MAN WHO WALKS back and forth in front of a bakery, or a theater, or a mill or a retail store and repeats the one word, "unfair," so that all who pass may hear, seeks to give the impression that he is out of a job and that somebody inside the place of business he is picketing is responsible. And therein he commits a palpable fraud, for he not only is not out of a job, but is probably receiving better wages as measured by the labor he performs than before he struck or was discharged. Pickets are paid for picketing.

For be it known that the labor unions are amply financed, and neither pickets nor any others who work for them do so without receiving ample remuneration therefor. Not infrequently the strike fund of the union amounts to a dozen times the combined assets of the employing firm with which it is at odds.

When the International Typographical Union demanded that the forty-four hour week be put into effect on May 1, some of the employing firms resisted and strikes resulted. The strikers on that date numbered 7,675 men and 932 apprentices. The members of the union at work by a referendum vote assessed themselves ten percent of all their earnings for the support of the strikers. This assessment brings in more than $200,000 per week, or nearly $1,000,000 per month, and from this fund is being paid $12 per week to strikers without dependents and $17 per week to heads of families. Not a great deal, to be sure, but when it is remembered that an additional $5 per week for each striker is paid to the local union to which he belongs and expended for his benefit it is certainly sufficient to make both ends meet while the recipient is "fighting for a living wage."

A few years ago when the same union inaugurated the forty-eight hour week in the book and job trade, it expended $5,000,000 which had been raised in a similar manner. The typesetters have never suffered for lack of the "sinews of war."

The Amalgamated Clothing Workers has been able not only to finance thousands of its members through protracted sieges of idleness, but has laid by a goodly store of cash, and plans to lay by a great deal more, to meet the expenses of trouble they expect to start next year. Until certain of the big employing firms surrendered recently, the Amalgamated had spent $2,000,000. It is now raising a $5,000,000 "defense fund," of which $3,600,000 will be in bank by the expiration of the current year, to use when the agreements with manufacturers' organizations expire in 1922. Who would have the hardihood to say that the manufacturers will have $5,000,000 with which to fight the Amalgamated, or that it will be sufficient if they do?

During the last sixteen months, the United Mine Workers of America, according to its own admission, has spent in excess of $2,300,000 for "relief" of its members in the Mingo County, West Virginia, coal field. Had the operators spent even a minor fraction of this amount in supporting men in idleness a hue and cry against it would have been raised from every soapbox in the land.

Whatever may have formerly been the case, it is no longer true that every industrial conflict is a struggle between labor and capital. More frequently nowadays it is a struggle between management and limited capital on the one hand against labor and unlimited capital on the other. When it comes to raising slush funds and expending the same, none of the old political parties were more adept than the labor unions of today.

GOLD IMPORTS AND PRODUCTION DECLINING

THE LIST OF COUNTRIES from which the United States has been obtaining gold is continually expanding, and has now become a most complete list of the countries of the world. This fact gives rise to many press reports detailing new arrivals of gold in this country, which have been construed as indicating a continuation of unprecedented gold imports, with no signs of termination yet in sight. Without considering the quantities involved in the recent gold movement from so many countries, it is easy to account for this erroneous interpretation.

The following review of the ten day period gold reports compiled by the Federal Reserve Board, however, shows that the influx of gold is declining in volume.

Gold Imports into the United States

10 days ending June 10, 1921,	$20,570,388
10 days ending June 20, 1921,	14,704,725
10 days ending June 30, 1921,	8,568,763
10 days ending July 10, 1921,	13,130,795

A decline of over sixteen million dollars in the importation of gold in the United States has occurred in the period June 11-July 10 as compared with the preceding 30 day period, May 11-June 10, which is a decline of over 30 percent.

If the United States received all the newly produced gold outside of this country, it would amount to about two hundred and fifty million dollars per year or slightly more than twenty million dollars per month, or an average of less than seven million dollars for a ten day period. With the importation of eight and a half millions for the ten days June 21-30, a very slight withdrawal from monetary stocks of one and a half millions was made.

While it is too early to predict definitely the end of the gold influx, resulting in a drain on our own gold stocks by an increasing exportation, these recent declines in the importation of gold are important straws which may indicate which way the gold wind is blowing. Further, there has not been a ten day period since the first month of the year when the gold exports were so heavy as from the period July 1-10, 1921, of $1,243,953, the most of which went to Sweden. Recent exports for ten-day periods have ranged from tens of thousands to a maximum of several hundred thousand dollars. This may be considered as another straw portending a forthcoming change in the gold balance account of this country.

The Federal Reserve Board has properly adopted a policy to hold as an exportable surplus the billion dollars of gold now in reserve in excess of our normal gold reserve, on the ground that the United States is but the custodian for this gold which must sooner or later be redistributed to the foreign countries whence it came as a basis for strengthening their currencies and bringing exchange back to the gold standard.

This policy is fundamentally sound for three reasons: (1) An effective gold standard cannot be maintained by a single country regardless of the strength of its gold position. (2) The export trade of the United States demands recuperation in the purchase power of Europe, which depends largely upon a redistribution of the world's gold reserve. (3) If the Federal Reserve Board allowed this surplus gold to become expanded in credit and currency, any appreciable demand for gold for export would involve:

(*a*) Gold embargo in the event of failure to rapidly liquidate credit and currency in order to release the gold required; (*b*) at best a rapid deflation of credit and currency the results of which need not be detailed, in view of the hardships now being sustained by industry through a process of deflation intentionally designed to be less rapid and therefore less painful in its consequences.

With the settled policy of the Federal Reserve Board in dealing with acquisitions of foreign gold to the nation's gold reserve, it is apparent that any additions which can be used for domestic credit and currency purposes must come from sources of domestic gold production. The mid-year reports of the U. S. Geological Survey, which are based upon the actual production of gold for the first six months of 1921 indicate that the production of gold for 1921 will not exceed forty-five million dollars, and may be considerably less. These reports further substantiate the statements previously made by THE AMERICAN MINING CONGRESS to the effect that gold mining costs had not greatly declined, and that unless governmental aid was expedited, other important producing properties would close down. Since these mid-year reports were issued the North Star and Empire Mines of Grass Valley, California, two of the most important deep mines of the state have shut down. On account of the lessened production of lead and copper, there will be a certain decline of from two and a half to three million dollars in the production of gold derived from the smelting of base ores. This will be a decline of over 50 percent of the by-product gold production of last year.

On account of the heavy consumption of gold in the industrial arts, there have been no additions to the monetary gold stock from sources of new production in the last two years, and while the consumption of gold in industrial arts has decreased during this year, it is probable that the newly produced gold will be entirely absorbed for other than monetary purposes. Even with the stimulus of substantial governmental aid to the gold mining industry made available at once, it would take the industry several years to regain its normal productive capacity. The losses already sustained in the wastage of ore reserves through neglect in providing a remedy can never be replaced. With the prospective drain upon our gold reserve, which has already been anticipated by the Federal Reserve Board in adopting so conservative a policy, financial authorities should take full cognizance of the present serious condition confronting the gold mining industry, with a view to meeting any future emergency which may arise. Temporary relief should be provided if it is desirable to maintain the gold producing power of the nation.

BRITAIN AND BELGIUM NAME MINE RESCUE DELEGATES

ASSURANCES that the governments of Great Britain and Belgium will be represented by delegates at the International First Aid and Mine Rescue meet, to be held in St. Louis on September 1, 2 and 3, have been forwarded through the State Department to the United States Bureau of Mines, under whose auspices the contests will be held.

The governments of Great Britain, France, Belgium and Canada were invited to be represented by one or more delegates at a series of conferences to be held in conjunction with the meet to consider the possible standardization and improvement of mine rescue methods. The British government has designated Lieut. Col. J. A. S. Ritson, D. S. C., M. C., one of His Majesty's Inspectors of Mines, as its delegate, while the Belgian government has designated E. Lemaire, director of the National Institute of Mines of Frameries, at Erbisoeul. Mr. Lemaire holds the title of Chief Engineer of Mines.

President Harding has been invited to attend one of the meetings and it is possible that the President will avail himself of this opportunity to deliver a message to the mining industry on mine safety work. Ex-President William Howard Taft was present at the first national mine rescue meet, held under auspices of the Bureau of Mines at Pittsburgh on October 30, 1911.

Governor A. M. Hyde of Missouri has been invited to speak on the State of Missouri's interest in the safety movement at a banquet to be held in the Coliseum on the evening of September 3. H. Foster Bain, director of the Bureau of Mines, in his letter of invitation, called Gov. Hyde's attention to the importance of the safety movement.

"In an industry which, in this country alone, employs more than a million men in hazardous work, the movement for greater safety and efficiency in mining has been gaining in impetus each year until today these contests are looked upon by the miners as one of the greatest events in the industry," Dr. Bain said. "With more than 50,000 miners having taken the Bureau's prescribed training course in first aid and mine rescue work and with these men organized into teams at the various mines throughout the country for the promotion of the welfare of their fellow workmen, their participation in the contests promises to make the event a humanitarian effort of great moment."

John L. Lewis, president of the United Mine Workers of America, has accepted an invitation to speak on the miner workman's interest in the safety movement and invitations have been sent to Senator Miles E. Poindexter, chairman of the Senate Committee on Mines and Mining, and Representative Marion E. Rhodes, chairman of the House Committee on Mines and Mining, to tell what the federal government can do to promote safety in the mining industry. Director Bain of the Bureau of Mines, as the closing event of the meet, will announce the winners and distribute the awards of the three-day contests in mine rescue and first-aid work.

TOWER HEADS COMMERCE DEPARTMENT IRON AND STEEL DIVISION

STEEL IS THE FIRST key industry to be recognized under the reconstruction plans of the Department of Commerce. Walter S. Tower, adviser on trade subjects to the Consolidated Steel Corporation, New York, has been appointed by Secretary Hoover as chief of this division of the Bureau of Foreign and Domestic Commerce. Before taking charge of the iron and steel division Mr. Tower will make a study of the commercial aspects of the shipping problem, including trade routes, allocation and assignment of tonnage, and after taking charge he will devote his attentions mainly to export problems, which will necessitate his making an investigation of the iron and steel industry in Europe.

Mr. Tower was formerly professor of economic geography and foreign trade at the University of Chicago, and was also connected with the Wharton School of Business and Finance at the University of Pennsylvania. During the war he was director of the division of planning and statistics of the United States Shipping Board. He is the author of numerous articles on shipping and traffic. The report of his investigation of port traffic of South America conducted eight years ago is still used as an authoritative document. He is considered as the possessor of both theoretical and practical knowledge necessary in the work he is about to undertake.

NEW LAND LEASING REGULATIONS

CO-OPERATION of the states in the administration of the national land leasing law is called for in regulations which have just been promulgated by Secretary of the Interor Fall. The regulations will be administered by the Bureau of Mines. In connection with their issuance, Secretary Fall gave out the following statement:

"The purpose of these regulations is to carry out the intention of the Land Leasing Law, concerning conservation on public lands and the protection of the Government's interest in the coal deposits. Under the terms of the Land Leasing Law, the Government becomes essentially a partner with the operator, and it is, therefore, essential that its interest as a partner should be safeguarded. These regulations will not be in conflict with the State laws, as it is the intention of the Department to co-operate fully with the States, in order to give uniform conservation measures on both State and public lands. But in addition to protecting the public welfare, the Department must protect its own interest in the public land.

"It will be the endeavor of the Department to institute the most workable conservation measures on the public lands and use its influence for unified and similar principles of conservation within the States. As the interest of the Government in this case lies in the production of the coal, with the highest possible extraction from the beds at the minimum expense, the interest of the Department of the Interior as lessor and conservation agency will be essentially identical with those of the lessee who expects to make money on long-continued production from these lands."

The regulations were drawn up after conferences with many operators and it is expected that they can be applied without difficulty.

MINE OPERATOR NAMED SENATOR

GENERAL T. COLEMAN DU PONT of Wilmington was appointed senator from Delaware on August 7 to fill the unexpired term of Senator Walcott, resigned. The appointment expires March 4, 1923. In addition to being a manufacturer of powder and other mine supplies, General Du Pont is himself an operator, having been heavily interested in Kentucky properties for almost a score of years. At the present time he is president of the Central Coal and Iron Company, the McHenry Coal Company, and the Jellico Mountain Coal Company, all of Kentucky.

MEMBERS OF SENATE SUB-COMMITTEE ON EDUCATION

who have taken an active part in the investigation into conditions in the Williamson Field, which includes Mingo County, West Virginia. From left to right: Senator Samuel M. Shortridge of California, himself a former mine employe; Senator Kenneth McKellar of Tennessee, who challenged and secured withdrawal of testimony that some of the gunmen in the ranks of the strikers were natives of the Volunteer State; Senator W. S. Kenyon of Iowa, chairman of the Sub-committee.

SENATE INVESTIGATES WEST VIRGINIA COAL FIELD TROUBLES

THE OPEN SHOP IS THE ISSUE, and the only issue, between the operators of the Williamson, West Virginia, coal field and the United Mine Workers of America.

True, the struggle has developed (degenerated would be a better word) into a clear-cut case of law and order, property rights and human rights versus robbery, assassination and anarchy, but it had its genesis in the attempt by labor agitators to unionize the mines—to say to the operators that they could no longer employ whomsoever they pleased and to the workmen that they could no longer accept employment whenever and wherever they pleased.

In its essence the strife which has raged in Mingo and adjoining counties for the last sixteen months is but a repetition of that which took place in the coal fields of Colorado, whose most frightful aspect was seen in the tragedy of Ludlow. The basic principle involved is identical and the consequences to date have been tragically similar.

This is the only conclusion deducible from the testimony presented at the hearing conducted by the special Senate committee headed by Senator Kenyon, of Iowa, which began in Washington July 14, and which late in the month had not been concluded. Evidence was offered by the Operators' Association of the Williamson Field and by District No. 17 of the United Mine Workers of America, and the following summary thereof tells the whole story.

Until May of last year the Williamson field coal mines were in full operation. Then the international organizers of the United Mine Workers of America arrived and began to collect signatures and membership fees. Some of the mine workmen remained loyal, some quit their jobs and others were discharged. Their places were immediately taken by others who did not care to join the union. On July 1 a strike was declared. Since that date the mines have been operated at full speed, making the best records of any mines in the country, and the non-union mine workmen are prosperous, happy, contented and desirous of retaining their jobs. Likewise since that time the union has persisted in its attempts to force the operators to deal with its officers, reinstate its members in their former jobs and if necessary discharge the loyal men who have been filling them so efficiently. This, the operators have refused to do; this, they still refuse to do; and this, they expect to continue to refuse to do as long as there is any law in the land.

That is to say, the above is the whole story except that which relates to the question of violence. For the evidence—which included all the facts and circumstances which the unions cared to present—convinced impartial observers that the characterizations "Matewan Battle," "Tug River Warfare" and other similar terms which have been applied to the disturbances in Mingo and contiguous counties during the last sixteen months had been very carefully selected and very properly and accurately applied. The hostilities which have raged in this district to such an extent as to attract national and even international attention do, in actual fact and without exaggeration, amount to a warfare, a warfare in which the issues at stake are greater than the world, outside of that part which is immediately involved, has realized.

It is charged by the operators, and generally believed, that if the United Mine Workers of America win out in the Mingo County struggle they will never desist from their campaign to obtain greater and greater control of the property of their employers until, by force and violence if necessary, they secure absolute possession of every coal mine in America, and without sharing in the expense of their development or paying their owners one cent for the title.

But, as stated in the opening paragraph there are human rights, as well as property rights, involved. The mines are all in operation today, with full forces of men at work, and these men whose fathers and whose grandfathers and whose great grand-fathers before them were American citizens are demanding that the government protect then in the right to work. Mind you, these are non-union miners who are now at work—not the members of the United Mine Workers of America who are out on strike—but the men who, despite everything the union agitators have said and are still saying, find that working conditions are satisfactory and that wages are good and that they can make a better living for themselves and their families working in the coal mines of the Williamson Field than they can in doing any other work anywhere else. These men, four thousand nine hundred and thirty-one of them, and some of their women folks, to be exact, nine hundred and twelve of them, presented a petition to the Senate Committee asking the government to protect them in their simple right to stay in Mingo County and work in the coal mines and live in peace.

These men are doing good work, too, for the statistics of the United States Geological Survey show that the eighty mines of the fifty-six companies involved in the struggle with the union are producing at 96 percent of capacity now, while the market for coal is dull, and that they have today a better record in this respect than any other mines in the United States. All but three or four hundred of them were living in the vicinity of the mines, or in West Virginia, before the troubles began. They and their families constitute approximately twenty-five thousand American citizens who are as determined as the coal operators themselves that they shall not be driven from their homes and their jobs. The union man who tells about the horrors of the Mingo County troubles always omits to include this important circumstance.

The opening statement of the operators was presented by Colonel Z. Taylor Vinson, of Huntington, West Virginia, their attorney. The statement opened with the declaration that:

"a proper inquiry into the conditions of Mingo County would of necessity involve the investigation of twenty-seven murders, at least one hundred cases of assault and other personal violence, numberless cases of insults, intimidations, threats and abuse, numerous instances of the use of explosives and incendiary fires to destroy property, as well as a thorough understanding of the methods and policies of the United Mine Workers of America."

What these methods and policies are may be judged from the attorney's further statement that:

"Prior to 1912 the United Mine Workers was a plain labor union. At the convention of 1912 it changed its principles and became a band of robbers. Prior to that convention, the constitution of the organization declared that the miner was entitled to an equitable share of the product of his labor, but at the 1912 convention the constitution was changed and made to declare that the miner was entitled to the full social value of the coal he produced, and that, interpreted, means every cent that may be received in the market for the coal except that which goes for transportation expense. This organization proposes to keep on making demands until they take over all the mines in the United States and Canada, and they do not propose to pay one cent for them. This is the fundamental policy upon which the organization has been built up. Every single, solitary disturbance, every case of murder and assassination that has occurred in West Virginia in connection with the mine troubles is traceable to this policy of the union to first unionize the mines and then take possession of the properties."

The attorney stated:

"The operators welcomed the opportunity to place before the Senate committee and the country the true causes of the disturbances in a coal field where strikes had been unknown for twenty-seven years, where contentment and industry abounded until the union organizers came, and where the mine owners and their employes were even yet continuing in a lawful business and attempting to exercise no right not guaranteed to them by the constitution and the laws of the United States and the state of West Virginia."

There was no trouble in the Mingo Field until May of 1920, when the union organizers arrived. The operators, as shown by the evidence, were not greatly concerned when a miner joined a union, but they were greatly concerned when the effort was made to organize their workers, and they did discharge workmen who were found to be agitating in favor of unionization. As they further stated to the Senate Committee:

"We have the legal and moral right to deal with our employes face to face and to discharge anybody who comes in there to start a disturbance. And we propose to stand on that ground just as long as there is any respect in this land for the law. And if this committee will say publicly that we have that right, there will be no more murders and assassinations in Mingo County."

"We emphatically assert," he said, "that all of the trouble, violence and murder that have occurred in Mingo and Pike counties for the past year has been directly caused by the activities and criminal practices of the United Mine Workers organization, which for years past has pursued a policy that is criminal in its character, and under and in pursuance of such policy, this organization is attempting by means decidedly criminal and unlawful, to substitute for law and orderly government the policy and practices of that organization."

The further assertion was made that there is "no industrial controversy and no strike involved between the mine owners and their employes, for the reason that the mines are being operated by men enough to produce all the coal that can be sold, and are actually producing 96 percent of the normal output of the field, notwithstanding depressed market conditions. These men are working of their own free will and accord, and desire to continue to work." The real question at issue, according to the operators' statement, is "Shall men be forced to join the union, contrary to their wishes, before they are allowed to work in the mines? Shall the mine owners be denied the right to employ such men as desire to work for them, when such men are not members of this union? Shall the right of individual contract be preserved?"

The miners' union not being a corporation or a partnership, "or a legal responsible entity," cannot be held to responsibility for any contract made with it, and no adequate damages can be secured when its contracts are broken, said the statement, while the individual who makes his own contract feels the responsibility of abiding by it, and is a more efficient worker.

"Many mine workers are definitely opposed to the United Mine Workers of America and do not desire to join it," he said, "and likewise there are many mine owners opposed to it, and it is clear that they should be protected in these convictions and in the right to act in accordance therewith. For the best interests of the mine owners, the mine workers and the public, it is vital that interference by either the union men or the non-union men with the rights of the other should not be tolerated."

The primary cause of the present disturbance was alleged to be the determination of the miners' union to force all those engaged in mining coal to join their organization. A further declaration was that "no question of wages, no question of working conditions, and no question of terms or conditions of employment has ever been involved, the sole question being the demand of the organizers and agitators that the union be recognized."

After the operators had made their opening statement, the attorneys for the union began to call their witnesses.

Fred Mooney, secretary and treasurer of District No. 17, United Mine Workers of America, was the first witness for the union. He testified he had made no effort to organize the Mingo County miners until four hundred of them sent him a petition to do so. That was in May, 1920. On the second day after his organizers began work, he received a message that the companies were evicting workmen from their homes, and a few days later he was informed that the Baldwin-Felts Detective Agency had sent some of its men to assist the companies. On May 19 the celebrated "Matewan Battle," in which ten people were killed, occurred. He had appealed to the governor of the state to protect the miners, he said, and had received no satisfaction. On July 1, he testified, when the mine workmen had already been locked out for joining the union, the strike order was issued. Mooney testified that he had made several ineffectual attempts to confer with the operators and that he had been unsuccessful. As to the latter part of the statement, he and the operators were agreed, as the operators did refuse to confer with him, and still refuse to this day. They refuse to deal with anybody except their own workmen as they have a right to do.

Mooney told the Senate committee that the miners demanded three things: the right of public assembly, the right to belong to a union, and a republican form of government.

A good insight into the methods followed by the mine workers in their attempts to organize the Williamson field was obtained by those who heard the cross-examination of Secretary Mooney, conducted by Captain S. B. Avis, of Charleston, leading counsel for the operators. In response to questioning by Captain Avis, Mooney admitted that the United Mine Workers of America had spent $2,567,000 in the Williamson field during the last year. Captain Avis asked the witness pointblank if some of this money had not been expended for arms and ammunition, and also asked him directly if he (Mooney) had not cashed a five-hundred dollar check last August and given the money to N. H. Atwood with instructions to buy guns, to both of which questions Mooney answered in the negative.

Mooney insisted, with heat and vehemence, that the operators had imported and employed numerous gunmen to intimidate the workers. Captain Avis challenged the truth of this statement at once and challenged Mooney to name just one of such gunmen. After persistent urging, Mooney gave the name of an Italian whom he had seen, but admitted that he had never seen him at any mine. When Captain Avis continued insisting that the witness, who was a responsible union officer, should be in position to make good such a charge, Mooney finally said that he could, by consulting his records, give the names of fifteen or twenty Baldwin-Felts detectives, and he claimed that they were paid gunmen. Then he admitted that they were secret operatives working under color of legal authority; insisting, however, that such authority as had been given to them even by state officials was given in violation of the constitution and the laws of West Virginia.

Continuing his ruthless cross-examination, Captain Avis challenged Mooney to relate one single instance of intimidation of mine workers by officers of the law or paid employes of the operators. Again Mooney resorted to the Italian, whose name he said was Tony Gaujot, saying that on one occasion when he was present Tony "made some remarks that led us to think he wanted us to say something back to him so he could start an altercation."

The unions have from the beginning told the public that the operators evicted great numbers of the striking workmen from their homes, breaking up their household furniture and showing little or no sympathy for their families. Captain Avis asked Secretary Mooney to testify as to one such instance if he could, and Mooney replied that he had never seen any one evicted either before or after the strike order was issued, that he had never seen any furniture thrown out into the street, and that the most he had ever seen in this respect was during May, 1921, when he saw one man's furniture in the street and was told that it had been placed there by an agent of the operators who had evicted its owner from company-owned property.

Captain Avis thereupon explained to the Senate Committee that the West Virginia laws fixed the relation between mine operators and their employes as that of master and servant, and not that of landlord and tenant, and that they gave operators and other property owners the right to evict their servants from their own property at will, with their own hands, without recourse to any court, and by force and violence if necessary. This statement by Captain Avis was denied by an attorney for the union, but attorneys for the operators succeeded without any trouble in convincing the Senate Committee that they had stated the situation accurately. Attorneys for the operators likewise proved beyond all doubt that the operators had in every instance served personal

WHO'S WHO IN MINGO COUNTY STRIKE CIRCLES

Some idea of the plane on which the warfare against the West Virginia coal operators and their non-union employes is being waged may be gained from the fact that the following gentlemen testified at the Senate hearing as star witnesses for the United Mine Workers of America:

Sid Hatfield, chief of police of Matewan, who is under indictment on a charge of killing the mayor, whose wife he married when she was a widow of two weeks' standing. When he came to Washington he was under six indictments in connection with Matewan murders and had already been acquitted on another. While he was in the Capital he was indicted in McDowell County, West Virginia, on some charge which he laughingly insisted he had "heered nothing about." He is only twenty-eight years old, and may yet bring fame to the already well-known Hatfield escutcheon.

Fred Mooney, secretary and treasurer of the United Mine Workers, District No. 17, who holds a permit to carry arms and admits he has never gone into Mingo County without a gun.

Frank Ingram, colored, who advised "his people" not to take the jobs formerly held by union miners, and who is now one of the committee in executive control of the strike. He could not tell the Senate Committee the exact title of his office, but he knew he was still drawing four dollars a day from the union sixteen months after the trouble started. He swore he had been arrested by three prohibition officers in the employ of the coal operators and beaten over the head and left for dead, but that the Lord heard his prayers and enabled him to get up and walk away as soon as the officers were out of sight.

James Kirkpatrick, Deputy Sheriff of Mingo County, whose official salary was, according to his own admission, supplemented by one twice as large received from the union for "preserving order."

notice upon their former employes to vacate their property, that these notices were served in a kindly way and that ample time for compliance was always allowed, generally ten days; that in numerous instances the companies had served a second notice, and that frequently they had employed a justice of the peace to serve a third notice, not because the law required the intervention of any court officer, but merely to show the good faith and good intentions of the operators. After the serving of notices had failed to produce the desired results, the operators sent their agents around to remove the furniture of the recalcitrants. Quite frequently the former employe had locked and barred the doors of the home, making the use of force absolutely necessary. But the force was used upon the operators' own property, and not upon the person or property of former employes.

Attorneys for the operators took this occasion to impress upon the Senate Committee again the fact that the troublesome workmen had either quit their jobs, or had been discharged for offensive actions, before the strike order was issued, and that not one single instance could be cited of a workman having his household goods thrown out into the street because he had gone on strike.

Further cross-examination of Mooney brought out the most damaging evidence as to the character of some of the twelve international organizers sent the Williamson Field by the union. Mooney was asked if one of these organizers was not John Brown, the same John Brown who confessed to Sid Hatfield that he had placed dynamite under a troop train on its way to Cabin Creek in 1912. Mooney said he could not testify as to the dynamite, but he admitted that John Brown was the same John Brown who was at Cabin Creek.

Mooney made the further admission that he held a West Virginia permit to carry arms, and that he had never gone into Mingo County without his gun. He admitted also that he had seen the president of his union carry arms.

With the utmost frankness, Mooney told the committee that no confidence could be placed in any of the officials of West Virginia from the governor down except the sheriff of Mingo County, whom he described as friendly.

But the best of Mooney's testimony was the last. It consisted of his statement that the open shop is always a negotiable issue with the United Mine Workers, and that the union was willing, even anxious, to work under an open shop arrangement in Mingo County. He said the union from the beginning of the trouble had attempted to place their position in this respect before the operators directly, and failed; that they had conveyed the same offer to the former governor (Governor Cornwall), who ignored them, and that a similar offer had been sent to the present governor three days before the hearing before the Senate committee began. Mooney's own explanation of the terms of this offer, showed that it was not made in good faith. It involved, among other things, the appointment of a joint grievance committee by the operators and the United Mine Workers. Such an arrangement would, manifestly, include recognition of the union as a responsible contracting body, and the opeators do not propose to enter into negotiations with any one except their own employes. Even if the operators were disposed to negotiate with the union, they would not enter into any agreement which did not include within its scope full protection of the life, the property and the jobs of the loyal men who have been at work for sixteen months or less.

No evidence worth considering was introduced at the hearing by the union except that of Mooney. All the rest of it was either pointless or consisted of mere accusation based on alleged hearsay. And Mooney's was valueless to the union. Mooney is an intelligent and able man, of strong character. He, just as any interested party would do, attempted to give a friendly interpretation of every incident about which he testified, and tried to palm off what he had heard from other members of the union as an accurate and truthful and full description of the troubles in Mingo County, but he should not be criticized for that. The point is that this man, the most able the unions could bring forth, attempted to convince his hearers that the union side of the Mingo County dispute was the right side, and apparently achieved the exactly opposite result. The Senate committee has not yet made its report, but when it does it will be seen that the members of the committee share in this estimate of Mooney's testimony.

The gaiety of the hearing was increased immensely by the testimony of Frank Ingram, colored. Ingram told a long story about his own persecution. The most interesting part of his statement related to his adventures in a county adjoining Mingo. He stated that when the trouble began last May he advised "his people" to refrain from "taking the jobs" of the white men who worked in the mines and that he was discharged for doing so. Going to an adjoining county, he claimed, he was arrested by three prohibition officers, taken out of jail at midnight and beaten until apparently dead. However, he prayed earnestly and the Lord had heard his prayers, and he got up and went away shortly after his assailants disappeared. He said he knew the three prohibition officers were in the employ of the operators, because previously he had seen them evicting and assaulting miners in another county when they were openly and admittedly employed by the operators. Neither the jail records nor the court records show that Ingram was arrested at the time he claimed, and neither the jailor nor the three officers remember the occurrence.

Ingram testified as to other instances of alleged persecution, and said that since he was discharged he had been employed by the United Mine Workers, at a salary of four dollars a day, to render aid to the strikers. He is a member of the union, is still drawing his per diem sixteen months after the trouble began and while the mines are being worked by loyal employes, and is on the committee which has general control of the strike situation. He could not tell the title of his office or its exact duties, but he showed an accurate idea as to its emoluments.

Blaine Mainard, formerly a mine foreman, testified that he had been offered a bribe of $1,000 to blow up a trestle, and do it in such a manner as to throw suspicion on a union organizer. He declined the offer, he stated, but did not report the circumstance to the officers of the law.

James Kirkpatrick, a deputy sheriff of Mingo County, testified as to general conditions during the spring and summer of 1920. He admitted that he had received a salary as deputy sheriff and at the same time had drawn a larger salary from the United Mine Workers for looking after their interests. He had later resigned his position with the union. Senator Kenyon, chairman of the Senate Committee, asked him if he did not think he should return to the sheriff the salary he received while he was on the union payroll, to which the witness made no response.

The most picturesque witness of the hearing was Sid Hatfield, chief of police of Matewan, who has been acquitted on one charge of murder and is under six other similar indictments. He testified as to the "Matewan Battle," which transpired in May of 1920. Hatfield said he heard that Baldwin-Felts detectives had arrived to evict union miners and perform other services for the operators, and that when he learned they were armed he asked the mayor to give him a warrant for their arrest. The mayor did so, and when he approached the detectives one of them told him that they had a warrant for him (Hatfield), and placed him under arrest. The mayor subsequently came to his assistance, examined the warrant and told the detectives it was "bogus," whereupon the mayor was shot dead. Then a detective was shot dead, and in the melee seven were killed. Two weeks later Hatfield married the mayor's widow.

C. F. Keeney, the president of the union for District No. 17, testified, and he also claimed that the fund of more than two million dollars had been used, and was still being used, only for relief, and not for purchasing arms. He also made the usual charges as to "gunmen" employed by the operators.

That the operators have good reasons for refusing to have any dealings with the United Mine Workers, was shown by Harry Olmstead, member of the Labor Committee of the Operators' Association of the Williamson Field. The union, he testified, did not keep its contracts, adding, "The reputation of the United Mire Workers for breaking contracts and halting or suspending operations of mines for weeks at a time without excuse has become notorious in the history of the coal industry." He testified that during the forty-five months ending December 1, 1919, the union in violation of its agreements had called 705 strikes at individual mines in Kansas.

The Williamson field mine owners object to unionization, Mr. Olmstead testified, because the mine workmen demand a six-hour day and a five day week, a substantial pay increase for all classes of mine labor, nationalization of coal mines, co-operation instead of competition in the coal trade, free and unrestricted right to unionize under government control, and the right to bargain with the government. The general attitude of the mine workers' union, he asserted, was to have a full partnership in the operation of the mines and to direct their policy.

If the union should be successful in its efforts to organize the Williamson field, Mr. Olmstead stated, it would be in position to control the entire coal output of the country and could suspend or curtail production at any time, which power would give them control of transportation, and therefore of all commerce and industry. He showed by Geological Survey statistics that during the strike period of 1919 the non-union fields of West Virginia and Kentucky supplied the country with practically all the coal it secured, this averting a national disaster.

"It is unthinkable," Mr. Olmstead said, "that the mines should be placed under control of an organization that will wantonly murder workmen and destroy the property of men who have the right to own, utilize and protect it."

It was Mr. Olmstead who presented, for the operators, the petition signed by mine workmen and women asking the protection of the government.

Other representatives of the operators testified to the same general effect.

The outsider who attempts to form an opinion regarding the Mingo County situation must remember that it is the United Mine Workers, as an organization, which must prove its case. The members of this organization in the Williamson field are not at work and are not being asked to return to work. They are on the outside, to which place they knowingly betook themselves, trying to get in. They are the aggressors. The operators, having all the men they need, are satisfied with the labor situation. Their workmen are satisfied with their jobs. They do not see why they should be discharged, and neither do the operators, and if the union knows of any reason why they should be discharged its officers and other witnesses failed to make it known at the Senate hearing.

Practically all of the evidence," so-called, submitted at the hearing was submitted by the union. It was not incumbent upon the operators to submit any evidence. Their showing consisted in the main of a declaration of independence, a desire to co-operate with responsible officials in preserving order, and a willingness to submit any document desired or to answer any question the Senate committee might care to ask. It was up to the union to prove its case, and this it did not do.

As the situation stands today, the West Virginia mines are busy. There is no strike, but there is a controversy. On the one side are the members of the United Mine Workers. On the other are the non-union mine workers and the operators and, as the union officials admit, all the constitutionally selected officers of West Virginia, except, possibly, one sheriff. The union workmen are being supported by a slush fund, and are discontented. The non-union workmen are being supported by their own labor, and are contented. The Senate committee and the public can be relied upon to judge correctly which side is right.

SECONDARY METALS RECOVERED IN 1920

THE TOTAL VALUE of secondary copper, brass, lead, zinc, tin, antimony, aluminum, and nickel recovered in 1920 was $188,507,260, or $6,666,000 more than in 1920. There was a decrease in the quantity of tin, aluminum, and nickel recoveries and an increase in the others. The feature was the great increase in the quantity of copper and brass recovery, the increase being caused by the utilization of scrap metal accumulated during the war.

The Geological Survey's figures for the last two years, issued late in July, are as follows:

Secondary Metals Recovered, 1919—1920

	1919		1920	
	Quantity (short tons	Value	Quantity (short tons)	Value
Copper, including that in alloys other than brass	112,400	$41,812,800	130,600	$ 48,060,800
Brass scrap remelted	249,700	75,944,100	259,800	77,454,500
Lead as metal	55,684	12,942,600	56,350	19,944.000
Lead in alloys	66,416		68,300	
Zinc as metal	39,910	6,711,900	42,850	8,181,000
Zinc in alloys other than brass and in chemical compounds	6,062		7,650	
Tin as metal	5,977	29,868,200	7,200	22,765,700
Tin in alloys	18,056		16,300	
Antimony as metal	48	717,900	200	938,560
Antimony in alloys	4,351		5,400	
Aluminum as metal	6,017	12,014,600	5,000	9,489,100
Aluminum in alloys	12,674		10,500	
Nickel as metal	163	1,829,400	270	1,733,600
Nickel in nonferrous alloys	2,284		1,930	
		$181,841,500		$188,507,206

ANALYSIS OF MINERAL PROVISIONS OF FORDNEY TARIFF BILL

AS IT CAME FROM THE COMMITTEE, the Fordney Tariff Bill carried protection for nineteen groups of mining products. The clause providing a duty on crude and fuel oil was stricken out on July 18. The mineral provisions of the measure follow:

Barytes—Crude, \$4 per ton; ground, \$7.50 per ton; precipitated barium sulphate or blanc fixe, 1 cent per lb.; lithopone and other combinations or mixtures of zinc sulphate and barium sulphate, 1½ cents per lb.

Manganese—Ore and concentrates in excess of 30 percent metallic manganese, 1 cent per lb. of metallic manganese content; ferro-manganese, 2⅕ cents per lb. of metallic manganese content.

Molybdenum—Ore or concentrates, 75 cents per lb. on the metallic molybdenum contained; ferro-molybdenum, all molybdenum compounds and alloys, \$1.25 per lb. of molybdenum contained plus 17 percent ad valorem.

Tungsten—Ore or concentrates, 45 cents per lb. on metallic tungsten contained; ferro-tungsten, tungsten powdered, all other compounds of tungsten, 72 cents per lb. on tungsten contained plus 15 percent ad valorem.

Bauxite—\$1 per ton; aluminum, 5 cents per lb.; in plates, sheets, bars, etc., 9 cents per lb.

Magnesium—\$1 per lb.; magnesium alloys and manufactures, \$1 per lb. on magnesium content plus 20 percent ad valorem.

Quicksilver—7 cents per lb.

Nickel—In pigs, 5 cents per lb.; manufactured, 30 percent ad valorem.

Tin—In bars or pigs, scrap or granulated, 2 cents per lb.

Lead—Ores and mattes, 1½ cents per lb. on lead contained, with a proviso for the admission of 2,000 tons of lead contained in copper matte free of duty each year; lead bullion, antimonial lead, scrap lead, type metal, babbit, solder or alloys or combinations of lead, 2⅛ cents per lb. of lead contained; lead in sheets, pipe, shot, etc., 2⅜ cents per lb.; lead acetate, white, 3¼ cents per lb.; brown, grey or yellow, 2¼ cents per lb.; nitrate, 2½ cents per lb.; arsenate and resinate, 30 percent ad valorem; litharge, orange mineral, red and white lead, 2⅞ cents per lb.; pigments containing lead, 30 percent ad valorem.

Zinc—Zinc-bearing ore, including calamine under 10 percentum zinc, free; over 10 and less than 20 percentum zinc, ½ cent per lb. of zinc contained; over 20 and less than 25 percentum zinc, 1 cent per lb. of zinc contained; over 25 percentum zinc, 1½ cents per lb. on zinc contained for the next two years. Zinc in blocks, pigs, slabs, old and worn out zinc, 2 cents per lb.; in sheets, plates, strips, fabricated or zinc dust, 2⅞ cents per lb. Thereafter duties shall be as follows: over 10 and less than 20 percentum zinc, ¼ cent per lb. of zinc contained; over 20 and less than 25 percentum zinc, ½ cent per lb. on zinc contained; over 25 percentum zinc, 1 cent per lb. on zinc contained. Zinc in blocks or pigs and zinc dust, 1⅜ cents per lb.; in sheets, 1⅝ cents; in sheets plated, 1¾ cents; old and worn out zinc, 1 cent.

Graphite—10 percent ad valorem.

Fluorspar—\$5 per ton for one year, thereafter \$4 per ton.

Kaolin—\$2.50 per ton.

Antimony—1½ cents per lb.

Mica—6 cents per lb. plus 17 percent ad valorem; unmanufactured, 12 cents per lb. and 17 percent. Ground mica, 6 cents per lb. and 20 percent ad valorem.

Potash—For two years, 2½ cents per lb. on potassium oxide contained; one year thereafter, 2 cents per lb.; one year thereafter, 1½ cents per lb.; one year thereafter, 1 cent per lb.; after five years, free.

Petroleum—Crude, 35 cents per barrel of 42 gallons; fuel oil, 25 cents per barrel.

Magnesite—Crude or ground, ½ cent per lb.; dead burned and grained, ¾ cents per lb.

In reporting the bill on July 6, Chairman Fordney of the Ways and Means Committee discussed in detail and explained its provisions. He said the chemical industries of the country had undergone marked development since the last tariff act, that of 1913, was enacted, and that many fundamental changes had occurred which had influenced international trade conditions. Many commodities had since that date become of commercial importance, making it necessary to give them specific enumeration or special tariff treatment. For instance, Mr. Fordney pointed out, approximately one hundred chemicals are given specific enumeration in the Fordney bill, for the first time in the tariff history of the country. Development of an American industry in the manufacture of these chemicals was a direct result of war conditions. Likewise, many commodities formerly considered of commercial importance have been dropped from the list of factors in chemical commerce, and therefore were not included in the Fordney bill.

The general rate of duty on chemicals has been established at a uniform level of 25 percent ad valorem, excepting a few representing infant industries or materials essential to national preparedness, which have been given slightly increased rates. All specific rates are equivalent to 25 percent of the prevailing domestic prices. Raw materials of foreign origin essential to domestic industries are on the free list. The bill covers a group of chemicals derived from hydrocarbon gases obtained from natural gas or waste products of petroleum cracking processes which are of recent development in this country and closely allied to production of explosives and poison gases. To encourage the manufacturer of these products in this country, they have been given special tariff treatment at a rate of duty higher than the general rates of the schedule.

The Ways and Means Committee was not convinced of the advisability of placing a permanent tariff on potash salts, but recommended a duty for five years so that domestic manufacturers might demonstrate whether a potash industry could be developed in this country to compete with European deposits.

Coal Tar Products.—Discussing coal tar products, Mr. Fordney said that any country which, like the United States, had an abundant supply of coal and a great industry like steel requiring much coke, had an unlimited supply of raw material and the crudes required no protection, but the situation with regard to the intermediates was different, as their production required elaborate chemical processes and a greater measure of protection. He held that a well developed dye industry in this country would furnish technically trained men of scientific knowledge upon which the important industries of the country might call. At present more than 200 different concerns are supplying 90 percent of the American market for coal tar products, and the necessity of saving and fostering such an industry is beyond argument. Mr. Fordney held that nothing short of a limited embargo would enable the American dye industry to continue. The license system has been discarded. Restriction upon importation of dyes is confined in the new tariff measure to such dyes as are now obtained in this country on reasonable terms as to quality, price and delivery.

In the earthenware schedule, Mr. Fordney explained, pecial consideration has been given to products of new 'ndustries fostered by the recent war, among them magnesite brick, pumick stone and graphite, and rates have been provided which will enable the manufacture of these articles in the United States to continue.

As to the metal schedule, Mr. Fordney explained that the rates of 1897 were revised downward in 1909, and that few mistakes were discovered during the four years of its administration of the 1909 law. He said the 1913 revision of this schedule was not scientific, more or less haphazard ad valorem rates having been established. Although conditions have materially changed in many of the metal industries since 1909, the same general structure of the schedule in that act is used in the present bill with some features suggested by the 1913 act, the classification having been prepared to meet new conditions.

Mr. Fordney discussed the products in this schedule under three groups: Articles produced by machinery including heavy rolled steel; articles produced in industries long established and thoroughly developed, wherein advantages of labor saving devices have ceased to exist, where the labor element is most important and where the difference in labor costs is the controlling factor in competition. An effort has been made in this group to provide duties which will equalize competitive conditions at home and abroad. The third group covers articles the production of which was begun during the war and which have not reached the stage of competition upon even terms with those longer engaged in industries in foreign countries. A number of these may be called infant industries, including the mining of the various ores of ferro-alloys and metals used in alloying steel, the duties proposed being designed to protect and encourage the development of these industries. Specific rather than ad valorem duties have been imposed because they are more readily determined and furnish greater protection in a falling market.

Representative James A. Frear of Wisconsin opposed what he termed excessive tariff rates on the ground that they would neither produce increased revenue or hasten a general return to normal business conditions, and that they would only enable favored industries to exact excessive profits. He attacked the cement duty, contending that it would benefit only the cement "trust," now under indictment; the raw aluminum duties, which he asserted would benefit only the aluminum "trust," and the asphaltum duties, which he declared would also benefit the monopolies and trusts.

Steel Duties Opposed.—Discussing steel duties, Mr. Frear said that during the past fifteen years, irrespective of tariff rates, one company had gained control of 43 percent of the steel output and had amassed assets of two and one-half billion dollars with over half a billion dollars surplus. He said there was no competition in this country or Europe for a monopoly that has prospered highly under the existing low tariff. He said the raising of the steel pool-price from $28.00 to $47.00 per ton during the war was indefendible for an industry that had ever been protected, but now shows little need of tariff protection, adding "any measure that protects this overgrown infant with high tariff rates will only serve to fleece the public."

Tungsten Duty Attacked.—Mr. Frear said that tungsten receives in the new bill a protective duty of from 100 to 200 percent above its present rate, a sharp advance over every rate from the 1846 tariff to the 1913 tariff. He said a new argument was offered that this is necessary for national defense with a direct inference that the United States will be ham-strung when thrown into a struggle with a civilized world and wake up to find a shortage of tungsten on hand. "Holding out threats of humiliating defeat in case of war, great interests demand prohibitive duties on manganese, tungsten, magnesite and other alleged military necessities," he said.

Attacking the dye schedule, Mr. Frear said "the steel trust foundation, cement trust foundation, and other trust foundations have a recruit in the chemical foundation."

The House, on July 18, by a vote of 196 to 86, adopted an amendement offered by Representative Treadway, of Massachusetts, placing crude oil and fuel oil on the free list. The action followed debate running part of two days in which advocates of a duty on oil argued that it should be protected the same as manufactured products, while opponents of the duty held that oil was a natural resource not properly dutiable, and that to impose a duty would increase the cost of manufacture by forcing industries which now use oil for power to consume coal at increased cost.

Chairman Fordney, of the Ways and Means Committee, in closing the debate in favor of dutiable oil, urged protection for the American oil industry, particularly in Oklahoma, Kansas, Louisiana and Texas, referring to the expense of oil operations.

The debate was marked by charges that the Standard Oil Company controlled the market and the price of crude and refined products. Mr. Fordney read a letter from President Harding protesting against the oil duty, but said he could not agree with the President's views. President Harding's letter pointed out that the proposed oil duty was inconsistent with the aim of the government to "encourage the participation of American citizens in the development of the oil resources in many foreign lands."

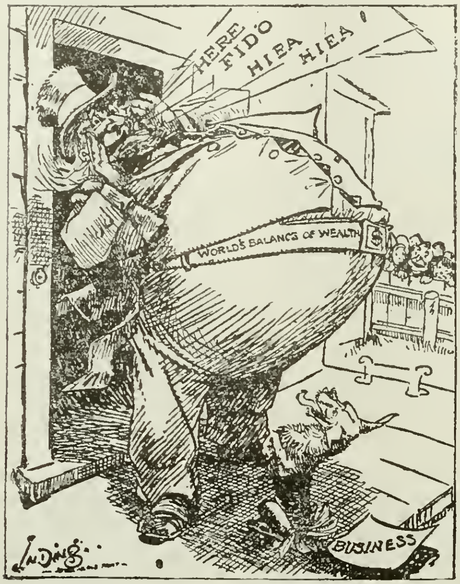
The President referred to the "growing concern of our country over the supply of crude oil to which we may turn for our future needs, not alone for our domestic commerce, but in meeting the needs of our navy and merchant marine." The President said the imposition of a tariff on crude petroleum "would be at variance with all that has been done to safeguard our future interest," although he was not "unmindful of the oil industry within our own borders, and most cordially believed in its proper consideration." The President recommended that instead of levying a straight duty Congress authorize him to impose a bargaining tariff to guard against the levy of the imposition by other nations of export tariffs designed to hinder trade.

Representative Tague of Massachusetts referred to New England opposition to the oil duty and read a letter from Governor Cox and the Massachusetts Chamber of Commerce against the oil tariff. The Governor said the tariff would injure new oil refineries in Massachusetts and raise the price of coal in New England. The governor estimated that 500,000,000 gallons of Mexican crude oil would be taken into Massachusetts this year equivalent to 2,750,000 tons of coal. The governor's letter was based largely on information furnished by the state fuel administrator, which showed that imports of crude oil into Massachusetts have arisen from 48,500,000 gallons in 1919 to an estimated 500,000,000 gallons in 1921. The governor's statement said fuel oil gives business men a chance to protect themselves from exploitation by the coal trade, uncertainties of labor conditions at the mines, and transportation difficulties.

Representative Bowling of Alabama opposed protective duties on steel and aluminum on the ground that these commodities did not need protection as they were monopolies. Mr. Bowling said the proposed duty on graphite was totally inadequate to permit American mills to resume business and that the low duty had been fixed because of opposition to higher rates by crucible makers.

He referred to development of the graphite industry during the war, and said it should have been given a duty of three cents per lb. instead of 10 percent ad valorem. The 3 cent duty would have yielded a revenue of one and one-half million dollars. He opposed the duty on potash as prohibitive.

Lead, Zinc and Cobalt.—Representative Rhodes of Missouri, Chairman of the House Committee on Mines



THE LOST DOG —*New York Tribune*

and Mining, discussed the lead, zinc and cobalt duties. He said the duty on cobalt would benefit American producers. He said lead and lead products should be protected against the importation of cheap lead from Mexico and other countries and believed the rates provided in the tariff bill would afford the necessary protection. He said that all barytes mines in Missouri were closed, as well as the mills in Missouri and Illinois, on account of the competition of foreign imports. He also said the barium chemical industry in this country was dead but hoped for its restoration with the increased tariff duty. He said that while the pending bill did not provide as high duty on crude ore or on the barium chemicals as desired, he hoped the committee would consent to increase the rates in order to protect the industry.

ADVANTAGES OF U. S. VALUATION SHOWN TO CONGRESS

ABSOLUTE NECESSITY exists for the adoption of the American valuation plan of estimating ad valorem duties on imported articles, in the opinion of the American Valuation Association. This association, whose efforts in this direction have the approval of the American Mining Congress, filed a brief with Congress on July 5.

Adoption of the American valuation plan constitutes the most important change ever advocated in tariff legislation. Its proponents assert it has been made necessary by the great disparity between manufacturing costs and wages here and abroad and by the violent fluctuations in foreign exchange. They point out also that it works equally well when applied either to the rates normally granted by a protective tariff, or by a tariff for revenue only, and that it is favored and endorsed alike by Democrats and Republicans.

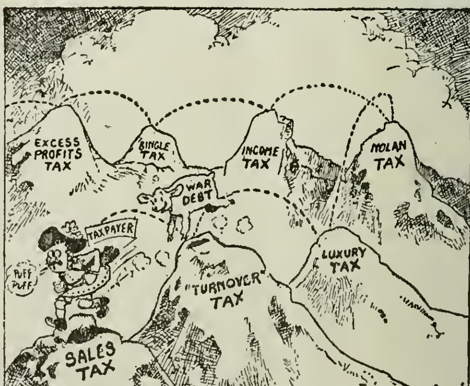
Under the existing system, ad valorem tariff duties are assessed upon the basis of the price of the imported articles in the principal markets of the country of their origin. Under the proposed plan, the "value" of any article, for the purpose of assessing duty, will be the price at which comparable and competitive products in the United States are ordinarily sold or freely offered for sale in usual wholesale quantities in the principal markets of the United States.

Advantages of the plan are set out in the brief of the American Valuation Association as follows:

1. The proposed law adequately and comprehensively provides for the assessment of duties on all classes of merchandise.
2. The proposed law is practical and workable.
3. Under the proposed law, the present difficulties and discriminations arising from fluctuation in foreign exchange in the same of different countries will be eliminated.
4. American valuation will eliminate discriminations and secure the same amount of duty on the same commodities from whatever country imported.
5. Undervaluations and evasions will be impossible under the proposed law, which will insure to the Government all the revenue intended for it, and to the American manufacturer all the protection afforded by the Tariff Act.
6. American valuation will nullify the trade combinations formed in foreign countries for the purpose of fixing low export invoice values to minimize American duties.

The proposed law adequately and comprehensively provides for the assessment of duties on all classes of merchandise:

(A) On articles comparable to those made in America, the duty



—*Sioux City Tribune*

"—AND EVERY PLACE THAT MARY WENT THE LAMB WAS SURE TO GO"

will be assessed on the basis of American valuation posted in all custom houses.

(B) On new or unusual or distinct designs, not comparable to American products; new commodities never before imported into or sold in America, the duty will be assessed on the foreign cost as defined therein, plus packing, freight, insurance, etc.

SETTLEMENT OF PENDING CASES FIRST TASK OF INCOME TAX UNIT

By McK. W. Kriegh

WHILE Congress is considering tax revision, it must not be forgotten that several hundred thousand cases are now pending before the Bureau of Internal Revenue for settlement under present and past laws, and that no matter what relief may be afforded for the future through the repeal or modification of the law, these pending cases must be settled before a normal status can be reached.

Large additional assessments for the years 1917, 1918 and 1919 are anticipated, when returns for those years are finally audited by the government, roughly estimated at between $1,000,000,000 and $2,000,000,000; although some estimates submitted to the Senate Finance Committee fix the amount at more than $3,000,000,000. Manifestly, such a demand upon the business of the country, following the past two years of inactivity and retrenchment, will result in great hardship, and perhaps bankruptcy in some instances. The impending prospect of such an additional assessment, and the uncertainty born of past delay, has had a very depressing effect upon industry generally. From this situation there can be no relief except prompt and final action by the Bureau of Internal Revenue in disposing of these delinquent adjustments, or in the creation of a federal war tax settlement board or special court of review, entirely distinct and outside of the control of the revenue bureau, which should have authority to pass upon and adjudicate or compromise pending cases of prior years.

McK. W. KRIEGH
Of the Tax Division, American Mining Congress

The mining industry will experience its share of difficulty in the final settlement of war tax liabilities; although it can be said to the credit of the Natural Resources Subdivision of the Income Tax Unit that the number of mining cases pending for the years 1917 and 1918 is comparatively small. Many of these, however, are intricate, complex cases, involving large corporations with extensive holdings, whose valuations and invested capital statements, as well as schedules for depreciation, depletion, and other losses, must be verified and passed by government experts.

It has been impossible for the average business man to familiarize himself with the various provisions of the revenue laws, and their interpretation, as new and constantly changing rulings, regulations, and decisions of the bureau, the Treasury Department, the Attorney General, and the courts, are promulgated; and the taxpayer therefore should not be charged with full responsibility for the delay incident to the proper adjustment of his case. Neither should he be blamed for the general dissatisfaction which has attended the deferred assessment and collection of taxes.

For years he has employed a system of bookkeeping which seemed to meet the requirements of his business, then suddenly he finds that the system employed by his accounting department does not accurately reflect the status of his business for income and excess profits tax purposes, and, in order to secure a fair adjustment of those taxes, he is compelled to employ outside assistance, frequently at great expense, to prepare a correct statement of the facts.

While the books of a corporation are presumed by the revenue department to correctly reflect the business of the corporation, where it can be shown that errors have been made, the policy has been to give the taxpayer the benefit in so far as the statute permits. "What did you do?" is of far greater importance than "How did you do it?" Book entries merely record facts. They never create facts. Therefore, in making up income tax returns, it has been necessary to keep the facts in view rather than the technicalities of accounting methods.

Many questions and interpretations have made the effective and just administration of the excess profits tax law extremely complex, difficult, and dilatory. The proper adjustment of invested capital, as well as valuations made for the purpose of determining depreciation, depletion, or profit from the sale of capital assets, has resulted in more or less confusion on account of the different bases used, which have produced dissimilar results and dissatisfaction with the law. For example, what constitutes a fair measure of invested capital, or for valuations as of March 1, 1913, has been a matter of constant controversy. Recently the Supreme Court of the United States in the case of La Belle Iron Works v. U. S., finally settled one phase of the question by deciding that "a sum representing an increase (appreciation) in the value of ore lands can not be included in invested capital under section 207 of the revenue act of 1917," and "that the term 'invested capital' imports a restrictive qualification designed to guard against inflated valuations."

Irrespective of the merits of the various theories advanced regarding methods of valuation, it would seem unjust to the mining industry to apply the same yardstick, used in determining valuations in industries where values and profits are above ground and are known or ascertainable, to mining operations where values are speculative and uncertain and are brought into existence largely by successful exploration and development, where hazards are involved which are peculiar only to mining, and where an investor can not be sure that the results will be commensurate with the amount invested or his efforts to realize profit thereon. However, in this matter the revenue bureau has endeavored to deal fairly with the mining public, attempting, while traveling the unbeaten paths mapped out rather generally by the new law, to apply its provisions without discrimination.

Another of the many questions which have caused difficulty and confusion in the adjustment of tax claims is that of losses. The federal court in the case of Bryce v.

Keith, 257 Fed. 133, placed such a broad construction upon what constitutes one's trade or business that practically all losses are now deductible in determining net income provided the law is complied with. Losses may be classified principally as loss by elements not compensated for by insurance, loss incurred in trade or business to which the taxpayer gives his time and attention, and loss by isolated transactions during the period of the return. Losses, to be deductible, must be actually ascertained and determined and must be charged off of the books within the year for which return is made, and must be reflected in the balance sheets submitted.

When the revenue auditor makes his report and recommendations on the reliability of a return, the accuracy of that report and the fairness of those recommendations depend upon the co-operation he has received in making the audit; and a careful explanation or interpretation of accounts, records, and methods employed by a taxpayer, frequently saves serious difficulty in the final settlement.

One of the great difficulties which will be encountered in the collection of pending assessments for past years will be inability to pay due to the fact that profits of these years have been distributed or tied up in expanded or improved plant facilities, increased operations, increased inventories, or increased accounts and notes receivable. With slow collections, quiet or falling markets, and short credits, an additional assessment will cause real hardship. It would serve no useful purpose to give the foregoing comments publicity without concurrently offering the following constructive suggestions for the alleviation of the situation.

1. The creation, by Act of Congress, of a Federal war tax adjustment board for the purpose of facilitating the final settlement of complex tax cases still pending from 1917 and 1918. At its twenty-third annual convention held in Denver last November, the American Mining Congress adopted a resolution recommending this plan, and a bill providing for such a board is now pending in Congress.

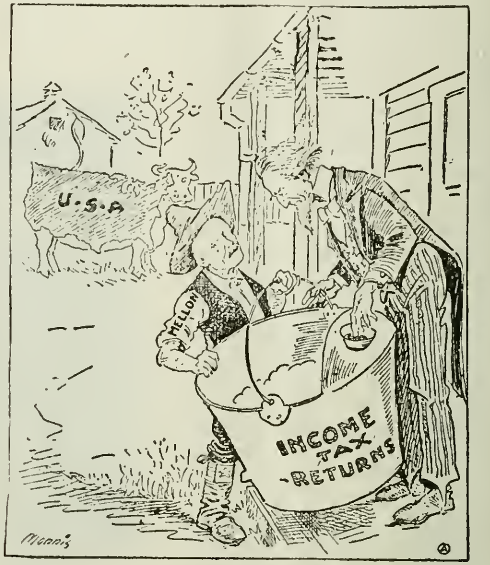
2. A further decentralization of the Bureau of Internal Revenue by transfer of the audit of returns to collection districts, as outlined in the annual report of the Commissioner of Internal Revenue for 1920.

3. The formation of a board of referees in each collection district, each board to consist of three members to be designated by the commissioner from the present personnel of the revenue bureau, who would have authority to hold hearings such as are now held in Washington, and to dispose of issues clearly covered by the law, rules, and regulations. In a mining district this board of referees should include an experienced mine accountant, a valuation engineer, and an attorney. This plan has been suggested by former Treasury officials and field agents, and the Tax Division, American Mining Congress, invites comment or criticism thereon.

With respect to the plan of decentralization and the formation of boards of referees, it is clear, from the taxpayer's viewpoint, that the determination of final tax liability in the collector's office, at the time of making return, subject, of course, to review by the Washington office, has great advantages over the present system; and it is also apparent that the ideal place to verify returns and check valuations is on the property and in the office of the taxpayer.

Disputed questions could be referred immediately to the district board of referees, hearings could be arranged for at convenient points within the district, the services of private tax experts could be dispensed with in many instances, and the result would be a great saving of time and expense, both to the taxpayer and to the government. The majority of such cases could be disposed of without further appeal, and review in Washington would simply amount to verification.

Many government agencies have adopted a similar plan. The General Land Office is represented in the field by registers and receivers of district land offices and by field agents who have authority to hold hearings and to



—*Morris for the George Matthew Adams Service*

"GREAT SCOTT, IS SHE DRYING UP?"
Income Tax Returns are short by $500,000,000.—News Item

decide cases, subject, of course, to appeal to the commissioner. The Interstate Commerce Commission likewise holds hearings in the field at points convenient for parties to litigation. It is the opinion of those who favor decentralization, that such a plan would be welcomed by those wrestling with serious problems of taxation.

It has been the consensus of opinion that the excess profits tax law would be repealed, and that a sincere attempt would be made to simplify the entire system of taxation, the main objectives being the reduction of taxes and the elimination of apparent injustices and complexities, and the relief of industries which, under the present laws, bear more than their fair proportion of the total burden. What Congress will do, however, is still a matter of conjecture, although the universal protest against the tax is certain to lead to modification of the law; but while this is being accomplished, the revenue agents are grinding out additional assessments, and so long as there remains a tax return to be audited or a property to be valued for purposes of tax settlements under existing laws, taxpayers whose cases are still pending must be prepared to meet every possible contingency.

FIELD AGENTS OF THE GENERAL LAND OFFICE

Commissioner William Spry, of the General Land Office, made a trip through the West in June to acquaint himself with the men under his direction and with general conditions respecting the public lands. He was accompanied by John D. Yelverton, chief of the Field Service. The photograph shows the group which attended a get-together meeting in Denver, taken at the railway station.

Mr. Yelverton has the lower row all to himself. Those in the upper row, from left to right, are Charles F. Reade, special disbursing agent of the Field Service; Frank M. Johnson, supervisor of government surveys for the United States; B. W. McLaughlin, secretary to Commissioner Spry; M. D. McEniry, chief of the Denver Division of the Field Service; John T. Murphy, chief of the Santa Fe Division, Clair Gordon, chief of the Cheyenne Division; Mr. McEniry, Jr., and Edward Doyle, special agent of the General Land Office.

MID-YEAR METAL MINING CONDITIONS

WESTERN STATE operators began the second half of the year faced by burdensome freight rates, continued high costs of labor and supplies and a dull market. Experts of the United States Geological Survey, who have made a thorough study of the situation, state by state, are convinced that the output of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, South Dakota, Utah and Washington will be greatly reduced, and that the production of the last six months will be smaller than that of the first.

Arizona production is expected to fall considerably below that of last year. The same may be said of California, although last year's output was decidedly below normal. Colorado production has been low since January. Idaho is not suffering to the extent of some of her neighbors, although neither business nor prospects is encouraging. The depression in Montana is more marked than at any time in the last decade. Nevada has suffered, and is still suffering, from a combination of economic ills. Only the Pittman Act has prevented every branch of the New Mexico mining industry from showing a loss or reduction either absolutely or comparatively. Gold production in South Dakota will probably exceed that of last year, but will fall far below normal. Utah and Washington are feeling the full force of all adverse conditions.

ARIZONA.—The metal output of Arizona will be smaller in 1921 than for many years, according to the expectation of V. C. Heikes of the Geological Survey. During the first three months of the year, copper production was at the rate of 35,000,000 pounds a month, a decrease of 25 percent as compared with last year. In April the market was so poor that most of the large producers stopped mining and smelting, as copper is the principal metal produced in Arizona. The output of associated metals will likewise show a great decrease this year.

The state's gold output last year amounted to more than four and three-quarter millions of dollars, 59 percent of which came from the United Eastern and the Tom Reed mines of Oatman. These mines are keeping up their record, but the closing of the copper mines and smelters will result in decreased production of the state at large.

The production of silver at several of the old camps, especially at Tombstone, was stimulated earlier in the year by the price of metal, but after the first three months the output was reduced, owing to the closing of the Douglas smelters. In June arrangements were made for shipping this ore to El Paso, Texas. A considerable quantity of silver ore and tailings was also being shipped from the Commonwealth Mine at Pearce.

CALIFORNIA.—Increased cost of production and low prices for metals have brought about a depression in California more pronounced even than that of 1920. Silver received during the first six months of the year by the mint, smelters, and refineries amounted to 1,235,820 ounces, or 726,535 ounces more than the first half of 1920, which itself was a heavy increase over that of 1919. Charles G. Yale of the Geological Survey, who made the mid-year survey on California, states that this showing is somewhat remarkable because several of the large copper mines of the state from which most of the silver produced in California is usually derived are still closed. The deficiency caused by their closing has been more than made up, Mr. Yale reports, by the silver and silver-lead mines, more of which have been producing than in the preceding twenty-five years or more. Most of these mines are in Inyo and San Bernardino counties.

The outlook for improved gold production is very bad. The cost of supplies has diminished only slightly. A contention between the operators and the unions over wages continues. Two of the most productive deep mines of the state are expected to close within a few weeks.

"At one of the larger mines," Mr. Yale reports, "which crushed more than 60,000 tons of ore last year, the cost of producing gold was $19.15 an ounce, and this property has perhaps the best equipped production plant in California, making a total recovery of 97½ percent."

The output of the deep mines appears to be falling off about 16 percent, whereas that of the placers is falling off about 12 percent.

Mr. Yale finds that conditions are unfavorable not only at the gold mines but also at those yielding copper and other metals. Most of the larger copper mines, and nearly all of the smaller ones, are closed down, as they were in 1920.

COLORADO.—From the beginning of the year, metal mining has been at a low ebb in Colorado. Low prices for lead and zinc forced the Sunnyside Mine to cease milling. The Wellington at Breckenridge continued operations but without shipping concentrates, and closed down in June. Redcliff cut its force of miners, but was unable to continue in operation by shipping heavy pyrite ore carrying silver. The silver mines in Boulder County were in operation throughout all of the first half of the year. Production at Cripple Creek is expected to almost equal that of last year. Only two lead smelters, those at Leadville and Durango, are operating now. The outlook for the state as a whole during the remainder of the year is not considered very encouraging.

IDAHO.—Decided decrease in the amount of shipments of ore and concentrates from Idaho mines was noted during the first six months of the year by C. N. Gerry, the Geological Survey investigator. This decrease was essentially noticeable in May and June after the Hercules, the Tamarack and Custer, and Gold Hunter mines were closed. The most encouraging features of the year were the reduction of freight rates on ore in January and on bullion in June.

The decrease in gold production was so great in 1920 that no further decrease is expected this year, except that gold derived from lead, ore, and copper will probably be less. Silver production in 1920 was greatly in excess of 1919, hence a decrease of output in 1921 is considered almost certain, especially so since 6 of the large producers are idle. Some of the largest mines, such as the Bunker Hill and Hecla, have been unable to continue operations on account of the Pittman Act, which they could not have done had they been dependent upon the income from lead alone.

Idaho's 1920 output, valued at $764,065,000, will probably not be reached this year. The mines in Shoshone County are idle, and those in Cushman County have curtailed production, while the Empire at Mackay is shipping only two-thirds as much as last year.

It is believed that the lead production will be smaller this year than last, when an increase was noted. The zinc output fell off nearly 60 percent last year, but during the first six months of 1921 no ore or concentrates at all were shipped, the stoppage of business being complete on account of the poor market and the expense of shipping to eastern smelters. Nevertheless, Mr. Gerry finds a bright ray of hope for the Idaho zinc industry, the said ray being the construction of an electrolytic zinc plant by the Bunker Hill Mining and Concentrating Company.

MONTANA.—"The metal output in 1921 will be less than any year in the last decade if present conditions continue," according to C. N. Gerry of the U. S. Geological Survey, as there was no demand for either copper or zinc. The mines of the Anaconda closed down in April, and the metal and smelting plants at Anaconda and Great Falls were practically idle. The closing of other mines at Butte brought production of the largest mining camp in the state practically to a standstill. Fortunately, as Mr. Gerry points out, the East Butte Copper Company continued to operate its mine and smelter at Butte, and the lead plant at East Helena was increasing its outputs of lead bullion, probably on account of the cost of silver-lead ores. In May the Anaconda began the treatment of silver-zinc ores, but no copper ores were smeltered.

Montana's 1920 gold production was valued at $1,851,165, a decrease from $2,220,588 in 1919. The 1921 output will be even less than that of last year, on account of the closing of the mines at Butte, which produced 35 percent of the state's entire gold output in 1920. The United States assay office at Helena is receiving less gold bullion than formerly because it is not allowed to pay the Pittman price for the associate silver.

Although the silver output of 1919 constituted a record for Montana, that of 1920 was even greater, being valued at thirteen and three-quarters millions dollars, but a smaller production is anticipated for 1921 on account of the closing of the mines at Butte.

The copper output of Montana last year aggregated 177,059,260 pounds valued at $32,578,904. The normal annual output is about 300,000,000 pounds. During the first four months of 1921, the state production was only 38,000,000. As is well known to every student of the market situation, it is impossible to say when mining will be resumed on a large scale, and Montana's copper output for the remainder of 1921 is not at all pleasing.

Idleness of most of the lead-zinc mines presages a decreased output of lead and zinc. The East Helena plant is shipping lead bullion at an increased rate, much of the smelter material coming from the outside of Montana. zinc concentrates were not shipped to eastern smelters after February and only a small amount of silver-lead-zinc ore was being mined at Butte and treated at Anaconda and Great Falls.

NEVADA.—Decreased output, in fact a much smaller output than in any recent year, is predicted for Nevada by V. C. Heikes of the U. S. Geological Survey. Unfavorable market conditions seriously affected the copper, lead, and zinc industry, and labor troubles at Tonopah and Divide have curtailed the output of gold and silver bullion.

During 1920, when there was a decrease in gold production, 6 mines produced half of the state's output, but 4 of these having been producing at a reduced rate this year The quantity of gold obtained from copper ore will be decidedly less this year. The strike at Tonopah and Divide will also reduce the silver output, as has already been shown during the months of May and June. It is superfluous to say that the copper output will be smaller. The same statement may be made with regard to lead production. An increase in the output of zinc last year will likewise be followed by a decrease this year, unless market conditions improve and improve swiftly and greatly. The Yellow Pine Mine, the state's largest zinc producer, was closed early in 1921.

NEW MEXICO.—It is needless to review the copper situation in New Mexico. The future must bring forth more favorable conditions than have existed and than exist now before this branch of the mining industry begins to show a good profit again.

G. W. Henderson of the Geological Survey states that the Pittman Act, fixing the price of $1.00 an ounce for silver in domestic ores, has allowed the Mogollon Mines Co.'s silver-gold mines at Mogollon to continue operations steadily during 1921. The Aztec gold mine, at Baldy, for several years a heavy shipper of gold bullion, was not a contributor to the gold output during the first six months of 1921, but development there is being continued. Placer gold mining has been resumed at Elizabethtown. The gold and silver mines of Lake Valley and other Sierra County districts continued to make occasional shipments. The output of copper-bearing silicious gold and silver ore from Lordsburgd uring the first six months of 1921 was small in comparison with that of 1920. Development work, however, continued at Lordsburg, and one silver mine was reopened. Small shipments of gold and silver bullion and ore continued from Gold Hill.

The zinc mines at Hanover continued work at about 50 percent capacity, but the zinc mines at Kelly were closed early in 1921.

OREGON.—Conditions in Oregon improved somewhat during the first half of the year, although the state suffered along with others from the depression of gold and copper. San Francisco mint receipts from Oregon during the first six months amounted to $261,602 in gold and $3,762 in silver, an increase of $156,796 on gold and $2,017 in silver over the parallel period of last year. The Geological Survey's report for this state was made by Charles G. Yale.

The most striking development in Oregon in 1921 was at the Boswell mine, in the Holland district, in Josephine County, about 45 miles southwest of Grants Pass. The workings are only about 70 feet deep and run less than 100 feet horizontally on a deposit from 2 to 4 feet wide, but the mine has yielded $80,000 in gold.

Three gold dredges are operating in Oregon and a fourth will soon be added. These dredges, though their output has been less than formerly, still produce about 75 percent of the placer gold of the state.

SOUTH DAKOTA.—In January the Homestake mine and mills were more active than in 1920 and in April they were working at full capacity. Charles W. Henderson of the Geological Survey is of the opinion that if operations continue throughout the year at the same rate as during the first six months the Homestake will produce $1,500,000 more gold than it did last year. Production at the Trojan mine during the first six months also indicates an increased output this year. But it will take several years to bring the output of the Homestake back to that of 1917, the record year, when the output was $6,619,574. Normally, 17,500 feet of openings are excavated yearly, but during the last three years this amount has been reduced about one-half.

UTAH.—Unusually small production is also predicted for Utah by Mr. Heikes, who points to reduced shipments of ore and bullion, and the fact that most of the smelting plants are operating at minimum capacity. In June, 1921, the lead plant at Murray was using only 2 out of 8 blast furnaces; the Midvalley smelter was using only 4 out of 7, and the International plant was using only 2. "A ray of hope for metal mining," Mr. Heikes reports, is seen in the fact that wages are lower, and that the freight rates on ore and bullion have been reduced, but these immediate conditions do not compensate for the excessively dull domestic market for copper, lead, and zinc and the absence of demand from foreign countries."

The output of gold in Utah has been steadily decreasing since 1911. Most of the smeltering comes from the lead ores and copper ores of Bingham and the silicious and lead ores of the Tintic districts. Shipments from Tintic were smaller during the first half of the year, and several of the copper and lead mines at Bingham were closed. Last year's silver output was above the average of the last 10 years, but the total for 1921 is expected to be far below normal. Producers of silver-lead ore at Park City have had difficulties over smelter contracts, and some of the mines at Tintic are closed on account of the expenses and other difficulties of marketing. However, the Chief Consolidated Mine Company, the largest producer last year, has been shipping equally heavily during the last six months, and the Tintic Standard Mining Company, the second producer in size, has shipped smelting ore in even greater quantities than last year, and has also completed and put into operation its milling plant for silicious silver ore. The Vipont Mining Company of Boxelder County has also maintained its production of silver ore treated by flotation.

Decreased production is predicted for copper and lead and zinc. The United States Mining Company has continued to ship lead-zinc ore from Bingham, but the Utah Apex and the Utah Consolidated Mines closed. The Ophir Mines closed in January, and production at Park City has been less than that of 1920. The increased shipments from the Tintic Standard and the Chief Consolidated have been offset by smaller output from other mines in the same district. The electrolytic zinc plant at Park City was closed early in the year because of the great increase in electric power rates.

WASHINGTON.—General depression of the metal market caused an unusually small output from the mines of Washington during the first half of the year, especially in respect to lead, silver, and copper. Mines of the Republic district, which produced most of the gold of the state, have been seriously affected by the increased cost of freight and labor. Reduction of freight rates on silicious ores from Republic in June is expected to aid in stimulating the shipments. C. N. Gerry, who made the Geological Survey report for Washington, states that the production of silver has not been stimulated by present high price.

1920 FIVE-METAL OUTPUT

THE SECOND ADVANCE REPORT on the five-metal production for Arizona, California, Colorado, Nevada, and Oregon during 1920, issued by the Geological Survey, shows the following:

ARIZONA

	1919	1920
No. of producers	339	318
Ore treated (short tons)	$13,727,403	$14,920,478
Gold (ounces)	217,997. 72	231,528. 65
Silver (ounces)	5,266,605	5,355,303
Copper (pounds)	538,100,844	558,256,302
Lead (pounds)	10,203,078	14,599,765
Zinc (pounds)	1,717,000	1,457,296
Total value	$111,157,872	$114,628,584

CALIFORNIA

	1919	1920
No. of producers	650	500
Ore treated (short tons)	1,714,911	1,165,022
Gold (value)	$16,695,955	$14,311,043
Silver (value)	1,240,051	1,859,896
Copper (pounds)	21,732,507	12,626,272
Lead (pounds)	3,568,267	4,813,510
Zinc (pounds)	472,990	1,165,509
Total value	$22,201,898	$18,973,660

COLORADO

	1919	1920
Gold (ounces)..	9,886,627	7,578,107
Silver (ounces).	5,758,010	5,399,907
Copper (pounds)	3,560,207	3,937,212
Lead (pounds)..	37,070,241	45,383,025
Recoverable zinc (pounds)	38,112,424	45,566,613
Total value..................	$21,744,725	$21,509,989

NEVADA

	1919	1920
No. of producers.......	421	473
Ore (short tons)........	3,187,831	3,480,620
Gold (ounces).......	219,695. 16	172,540. 46
Silver (ounces)........	6,863,580	7,745,093
Copper (pounds)......	52,331,175	50,559,763
Lead (pounds)..........	15,349,370	21,263,700
Recoverable zinc (pounds) ...	9,004,698	10,698,040
Total value..............	$23,433,171	$23,879,512

OREGON

	1919	1920
No. of producers.........	78	67
Ore treated (short tons)....	96,173	82,156
Gold (value)..............	$977,845	$1,017,490
Silver (ounces).......	111,121	82,743
Copper (pounds)...............	2,214,815	2,355,276
Total value........	$1,514,255	$1,541,051

LEAD AND ZINC PIGMENTS, 1919-1920

AN INCREASE in quantity sold was shown by every product except zinc oxide, in the Geological Survey's summary of lead and zinc pigments for 1920 as compared with 1919. The average selling price of the other pigments was also greater. Litharge, with sales 33 percent greater and the average selling price 44 percent larger, showed the best record.

Comparative figures for the two years are shown in the following table:

Lead and Zinc Pigments Marketed in the United States

	1919		1920	
	Quantity (short tons)	Value Per ton	Quantity (short tons)	Value Per ton
White lead:				
Dry.......	30,086	$161.07	33,678	$188.60
In oil..........	109,005	197.97	112,017	231.98
Red lead and orange mineral....	32,362	164.21	34,431	218.50
Litharge.........	46,739	137.61	62,329	198.72
Zinc oxide........	117,639	175.04	99,444	179.60
Leaded zinc oxide.	27,591	145.30	30,460	146.67

MINT OUTPUT 1921

COINAGE EXECUTED at the mints of the United States for domestic purposes during the fiscal year ended June 30, 1921, was as follows:

Denomination	Pieces	Value
(No Gold Coined)		
Silver		
Standard Silver Dollars (Coined under terms Pittman Act of April 23, 1918......................	19,043,000	$19,043,000
Half Dollars.....................	7,674,000	3,837,000
Half Dollars, Maine Centennial....	50,028	25,014
Half Dollars, Landing of Pilgrims ..	200,112	100,056
Quarter Dollars...	21,648,000	5,412,000
Dimes	40,150,000	4, 000
Total Silver	88,765,140	32,432,070
Minor		
Five-Cent (Nickel).	60,448,000	3,022,400
One-Cent (Bronze)..	313,207,000	3,132,070
Total Minor....	373,655,000	6,154,470
Total Domestic Coinage	462,420,140	$38,586,540

The mints also produced coins for foreign countries as follows: for Cuba, 3,625,352 silver pieces and 18,278,000 nickel pieces; for Peru, 20,000,000 nickel pieces; for Venezeula, 2,000,000 nickel pieces; for Colombia, 1,000,000 silver pieces and 35,000,000 nickel pieces; for Indo China, 6,765,000 bronze pieces and 1,000,000 silver pieces; for Salvador, 3,780,000 nickel pieces—making a total of 91,448,352 coins.

WORLD COPPER SUMMARY, 1920

SMELTER PRODUCTION of primary copper in the United States during 1920 was 1,209,000,000 pounds, or 6 percent less than that of 1919, according to the latest report of the U. S. Geological Survey, prepared by H. A. C. Jenison. The figures are subject to review. The average price reported by selling agencies on deliveries of 1,724,000,000 pounds made during the year was 18.433 cents per pound, and upon this basis the value of the year's production was $222,467,000, as compared with $239,274,000 for 1919.

Production during the year by states, from domestic ores, is shown (in pounds) in the following table (Production apportioned to the states in which the copper was mined. Figures represent the content of fine copper in the blister produced and the smelter output of ingot and anode copper from Michigan):

SMELTER OUTPUT OF COPPER, 1920

Alaska.........	66,093,924	North Carolina..	....
Arizona........	552,988,731	Oregon.........	2,529,311
California......	11,822,028	Pennsylvania ...	618,361
Colorado.......	4,282,616	South Carolina..	....
Georgia........	3,663	South Dakota...	2,190
Idaho.........	1,922,116	Tennessee.......	16,727,803
Maine.........	....	Texas..........	14,217
Maryland......	....	Utah...........	110,357,748
Michigan......	153,483,952	Vermont........	....
Missouri.......	533,368	Virginia........	....
Montana......	177,743,747	Washington.....	2,125,586
Nevada........	55,580,322	Wyoming.......	24,256
New Jersey....	....	Undistributed...	47,350
New Mexico...	52,159,751		
			1,209,061,040

The production of new refined copper in 1920 aggregated 1,635,000,000 pounds, a decrease of 170,000,000 pounds as compared with 1919. Production of primary and secondary copper and importations totaled 1,716,895,703 pounds. In addition, the regular refining companies produced bluestone with a copper content of 7,823,359 pounds.

Imports during the year amounted to 52,045,291 pounds of ore (copper content), 46,797,590 pounds of concentrates (copper content), 17,594,174 pounds of matte and regulus (copper content), 244,696,324 pounds of unrefined black copper and copper in bars, pigs and other forms; 108,743,298 pounds of refined in bars, plates, rods and other forms; 11,558,367 pounds of old copper and clippings for remanufacture, and 4,235,647 pounds of composition metal of which copper was the chief content in value.

The apparent domestic consumption of refined new copper during the year was 1,054,000,000 pounds, as compared with 914,000,000 pounds the year previously. Exportations from the United States during the last two years are shown (in pounds) in the following table:

COPPER EXPORTS, 1919–1920

	1919	1920
Ore (copper content)	507,846	248,712
Concentrates (copper content)	160,821	192,194
Unrefined black blister and converter copper (bars, pigs, and other forms)	1,674,411	1,843,293
Refined in ingots, bars, rods, or other forms	438,160,818	551,226,793
Composition metal, copper chief value	364,089	454,306
Old and scrap	449,804	577,319
Pipes and tubes	5,993,959	4,899,223
Plates and sheets	13,764,425	22,799,148
Wire	55,551,602	41,812,713
	516,627,775	624,053,701

During the year 9,030,288 pounds of brass valued at $15,128,651 was exported, as compared with the preceding year's exportation of 10,208,346 pounds valued at $13,912,878. Stocks on hand at the beginning of 1921, and also for the fifteen years immediately preceding, are shown in the following table:

U. S. COPPER STOCKS, JANUARY 1, 1906–1921

Year	Refined copper	Blister and material in process of refining	Year	Refined copper	Blister and material in process of refining
1906	118,224,028	110,000,144	1914	90,385,402	247,789,811
1907	46,497,181	135,310,239	1915	173,640,501	203,067,571
1908	125,745,796	175,254,659	1916	82,429,666	274,000,000
1909	121,876,759	234,013,843	1917	128,055,229	424,000,000
1910	141,486,244	266,754,808	1918	114,000,000	411,000,000
1911	122,803,656	245,218,530	1919	180,000,000	562,600,000
1912	88,372,195	219,864,749	1920	631,000,000	273,000,000
1913	105,497,683	274,072,084	1921	659,000,000	465,000,000

ANACONDA HAS LOW ACCIDENT RATE

IF ALL THE METAL MINES in the United States had had as few accidents as the Anaconda Copper Mining Company in Montana during the years from 1916 to 1919, the number of serious accidents would have been almost 50 percent smaller. A special tabulation and report for the thirty-two mines of the Anaconda company in Montana for the years 1915 to 1920 has been made by D. Harrington, supervising mining engineer for the Bureau of Mines.

In a total of 16,460,767.5 shifts worked by employes of the company's mines during the six years under survey, there were 2,005 serious accidents, of which 200 were fatal This is at the rate of 9,120 shifts per serious accident, and 82,304 shifts per fatality. Calculating 300 days as a year's work, there was one serious accident for every 30.4 years work, and one fatality per 274.3 years work.

During the years 1916 to 1919, inclusive, all the metal mines of the United States worked a total of 210,548,640 shifts and had 39,705 serious accidents, the rate being 2 fatal plus serious accidents per 10,000 shifts. But during the same period the Anacondà mines worked 11,958,978 shifts and had a serious accident rate of only .995 accidents per 10,000 shifts. Had the same rate obtained in the rest of the country, there would have been 18,705 fewer serious accidents than actually occurred. During this six-year period, only two of the thirty-two Anaconda mines exceeded the national average accident rate. One of these was a small mine which had a total of only nine accidents. Even the yearly records of these mines show comparatively few instances where the accident rate exceeded the country's average.

Mr. Harrington, concluding his report, makes the statement that the good record of the Anaconda mines does not come from good luck, nor does it come without effort. It is his opinion that rigid discipline in regard to safety matters was responsible. This discipline found expression in an efficient safety organization and the institution of safety methods, equipment and practices, entailing the expenditure of considerable time, thought, and money by the company and the men in charge of its operations.

PRINCIPAL FEATURES OF COPPER INDUSTRY, 1907–1920

Year	Refined copper, primary	Secondary copper	Smelter production, domestic ores	Imports, in unmanufactured form	Exports of metallic copper	Domestic consumption (new copper)	Average yearly price per pound	World's production
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*		*Pounds*
1907	1,032,500,000	....	869,000,000	253,000,000	509,000,000	488,000,000	$0.200	1,595,553,000
1908	1,138,900,000	....	942,500,000	219,000,000	662,000,000	480,000,000	.132	1,640,200,000
1909	1,391,000,000	....	1,093,000,000	322,000,000	683,000,000	689,000,000	.130	1,824,476,000
1910	1,422,000,000	....	1,080,000,000	344,000,000	708,000,000	732,000,000	.127	1,892,252,000
1911	1,434,000,000	214,000,000	1,097,000,000	335,000,000	786,500,000	682,000,000	.125	1,961,516,000
1912	1,568,100,000	275,000,000	1,243,000,000	410,000,000	775,000,000	776,000,000	.165	2,205,012,000
1913	1,615,100,000	273,000,000	1,224,000,000	409,000,000	926,000,000	812,000,000	.155	2,181,253,000
1914	1,533,800,000	256,000,000	1,150,000,000	306,000,000	840,000,000	702,000,000	.133	2,054,090,000
1915	1,634,200,000	392,000,000	1,388,000,000	316,000,000	682,000,000	1,137,000,000	.175	2,377,375,000
1916	2,259,400,000	700,000,000	1,928,000,000	462,000,000	784,000,000	1,479,000,000	.246	2,992,046,000
1917	2,428,500,000	767,000,000	1,886,000,000	556,000,000	1,126,000,000	1,395,000,000	.273	3,137,719,000
1918	2,432,400,000	705,000,000	1,908,500,000	576,000,000	744,000,000	1,662,000,000	.247	(a)
1919	1,805,300,000	574,000,000	1,286,000,000	429,000,000	516,000,000	914,000,000	.186	(a)
1920	1,634,900,000	(a)	1,209,000,000	486,000,000	623,000,000	1,054,000,000	.184	(a)

(a) Figures not available.

ALASKA'S GREAT MINERAL WEALTH TO BE DEVELOPED

TENTATIVE PLANS for the development of the mining industry in Alaska have been mapped out by the United States Bureau of Mines. Dorsey A. Lyon, supervisor of stations, who is in Alaska on a tour of inspection, is expected to return soon, and upon his report depends the complexion which the embryo plans will finally be given.

Alaska is larger than Norway, Sweden, Denmark and Finland combined, has a better climate than either and possesses more arable land, more coal, more timber and more minerals, as well as the greatest fishing grounds in the world. Development of these resources for the benefit of the entire United States presents a problem which has vexed government officials and economists for more than a score of years. During the last eleven years the population has decreased thirty percent, dwindling to a bare 27,000. The four countries mentioned above, with resources and climatic advantages considerably less favorable than Alaska's, support 12,000,000 people. The conclusion arrived at by the generality of students of the situation is that Alaska has been, and still is, "all bound round" with administrative and legislative red tape, and that these things must be cut before the residents of the territory destined to become the forty-ninth state of the union can come into their own.

President Harding for several months has been trying to arrange his affairs so as to make a trip to Alaska. It now appears that, because of international affairs and the continued duration of the sessions of Congress, he will be compelled to postpone his trip six months or a year. However, Secretary of the Interior Fall, who is as deeply interested in Alaska's prospects as is the President, and Secretary of the Navy Denby, who looks to the territory to supply coal to the Pacific fleet, may probably be able to make an earlier trip.

Under the tentative plans of the Bureau of Mines Alaska will be divided into four districts and each will be in charge of a Bureau of Mines engineer.

In addition to these four engineers, a supervising mining engineer will be given general charge of the coal districts, and upon him will develop the duty of correlating all of the territorial work. One of his principal duties will be to provide service for isolated camps and camps that lie on the border between districts. The Bureau of Mines experiment station at Fairbanks will continue to be the headquarters and clearing house.

The plans have progressed to the point of assigning engineers to three of the four districts. Bert W. Dyer, federal mine inspector of Alaska, has been assigned to district No. 1, which takes in the south coast, including the Matanuska, Kenai and Bering River coal fields, the Copper River basin, and for the time being the Katalla oil fields in southeastern Alaska. Mr. Dyer's duties will be mainly in connection with coal, copper, and lode gold.

In addition to his services as superintendent of the Fairbanks station, J. A. Davis will be in charge of district No. 2. This district includes the Nanana lignite field and the territory tributary to the government railroad from Seward to Fairbanks.

The interior of Alaska, comprising the Yukon and Tanana basins, will make up district No. 3, which has been assigned to K. T. Sparks, assistant mining engineer.

The Seward Peninsula will be district No. 4. No engineer has as yet been assigned to this district. According to a Bureau of Mines statement, it is believed that the best way to assist the mining industry in the Seward Peninsula district lies in the development of a practical and economical method of cold water flooding. An engineer qualified to carry out this work will be appointed to the supervision of this district, and he will work under the immediate direction of Charles Janin, consulting engineer of the Bureau, who is now studying and compiling results of experiments made by different companies.

It has already been decided that co-operation will be continued to the greatest extent with the field forces of the Geological Survey and with the territorial government. It is announced also that the bureau's forces will largely supplement the work of the territorial mine inspector, and that they will hope to make a complete annual inspection and report of all mines and prospects.

Owing to the lack of funds, one of the district engineers will be designated to serve temporarily as supervising engineer for the fourth district.

ALASKA MINERAL OUTPUT, 1920

PRODUCTION of minerals in Alaska last year amounted to $23,307,759, as compared with $19,620,913 in 1919. The gain of last year was due entirely to the increase in copper output, which jumped from 47,221,771 pounds in 1919 to 70,435,363 pounds in 1920. Eight copper mines were operated in the latter year as against 11 during the 12 months preceding. The output of all metals during the last two years is shown in the following table:

Alaska mine production, 1919–1920

	1919	1920
Gold	$9,426,032	$8,365,560
Copper	8,783,063	12,960,006
Silver	205,273	1,039,364
Coal	343,547	355,668
Tin	73,400	16,112
Lead	72,822	140,000
Platinum minerals	73,663	160,117
Petroleum, marble, gypsum, etc.	143,113	266,830
	$19,620,913	$23,303,757

The total value of Alaska's mineral output during 40 years is $461,474,789.

In 1920, seventeen gold-lode mines and 5 prospects were operated and produced gold worth $4,473,687.

The Alaska gold-placer mines have produced in all gold worth $217,885,000. In the summer of 1920, 488 gold placer mines, large and small, employing 1,987 men, were operated and during the previous winter 82 mines, employing 318 men.

The value of the output of gold from placers was $3,873,000 in 1920 and $4,970,000 in 1919.

ALASKA TO SEND BIG EXHIBIT

ONE OF THE MOST COMPREHENSIVE exhibits which will be seen at the National Exposition of Mines and Mining Equipment, to be held in Chicago in connection with the annual convention of the American Mining Congress, October 17 to 22, will come from Alaska. The exhibit, if plans for getting it together work out, will be decidedly different from others, in that it will consist of a complete portrayal of all of Alaska's industries, and not of the mining industries merely. Exhibits of other states and countries will be limited to a showing of their mining and mineral resources.

The citizens of Juneau are planning to have their fisheries, salmon and herring industries adequately represented, with the idea of increasing the consumption of these products. It is possible also that the potentialities of the pulp and paper industry will be set forth.

CENSUS REPORT OF MINE, QUARRY, AND WELL OPERATIONS IN 1919

A PRELIMINARY STATEMENT of the general results of the 1920 census of mines, quarries, and oil wells of the United States, covering the year 1919 and making comparison with 1909, was issued by the Bureau of the Census on July 30. The statement shows a slight decrease in the number of enterprises, a decrease in the number of individual mines and quarries, and a large increase in the number of individual oil wells.

Of the total number of enterprises shown, 11,466 in 1919, and 12,122 in 1909, were engaged in mining and quarrying industries and 9,814 in 1919, and 7,793 in 1909, in the petroleum and natural-gas industry. There is also shown a very slight increase in the number of wage earners and the total number of persons engaged in the industries. In contrast to these small changes, large increases are shown in power used, capital invested, principal expenses of operation, and the value of products.

Comparative Statistics 1919 and 1909

	Producing enterprises 1919	Producing enterprises 1909	Percent increase or decrease
No. of enterprises	21,280	19,915	6.9
No. of mines and quarries	13,766	18,164	−24.2
No. of petroleum and natural-gas wells	260,673	166,320	56.7
No. of natural-gas-gasoline plants	1,117	*	...
Persons engaged	1,077,570	1,041,682	3.4
Proprietors and firm members, total	21,907	29,922	−26.8
Number performing manual labor in or about the mines, quarries, and wells	5,257	8,861	−40.7
Salaried employes	74,154	44,127	68.0
Wage earners (average number)	981,509	967,633	1.4
Wage earners, Dec. 15, total	1,088,190	1,065,283	2.1
Above ground	382,230	366,962	4.2
Below ground	705,980	698,321	1.1
Power used (horse-power)	6,724,057	4,608,253	45.9
Capital	$6,955,466,831	$3,380,525,841	105.8
Principal expenses—			
Salaries	149,328,985	53,393,551	179.7
Wages	1,295,928,275	586,774,079	120.9
Contract work	81,418,289	28,887,898	181.8
Supplies and materials	555,222,936	202,729,754	173.9
Fuel and power	122,095,769	45,136,550	170.5
Royalties and rents	174,393,730	63,973,585	172.6
Taxes	140,998,714	17,796,763	692.3
Value of products	$3,228,023,845	$1,238,410,322	160.7

*Not available.

ACCIDENTS AT SLATE QUARRIES, 1920

FIVE FATALITIES, all in Pennsylvania, occurred in American slate quarries last year, and 364 men were injured. The rate per thousand men employed 300 working days was 1.49 killed and 108.20 injured. Of the non-fatal accidents, 272 occurred in Pennsylvania and 77 in Vermont. During the year 3,496 men were employed as compared with 3,373 in 1919. Each workman averaged 289 days and the total number of shifts for all employes was 1,009,244, an increase of 20 percent over 1919.

PORTLAND CEMENT FIRST HALF OF 1921

PRODUCTION of Portland Cement during the first six months of 1921 has been at 94 percent of the rate of last year, while shipments amounted to 98 percent. Stocks at the end of June were slightly above normal, amounting to eleven million barrels as compared to nine million on June 30 of last year.

Business at the beginning of the year was slow, but it increased month by month. Shipments exceeded production in May and June, and in June they amounted to 10,5000,000 barrels, or more than those of any preceding June.

Statistics for the first six months of the year, prepared by Ernest F. Burchard of the Geological Survey, have been based upon reports from manufacturers, and are as follows:

Finished Portland Cement production, Shipments, and Stocks first half of 1921.

Month	Production (Barrels)	Shipments (Barrels)	Stocks at end of mo. (Barrels)
January	4,098,000	2,539,000	10,300,000
February	4,379,000	3,331,000	11,400,000
March	6,763,000	6,221,000	12,000,000
April	8,651,000	7,919,000	12,600,000
May	9,281,000	9,488,000	12,450,000
June	9,296,000	10,577,000	11,150,000
Total	42,468,000	40,075,000	.. ...

MARBLE QUARRY ACCIDENTS

FOUR EMPLOYES were killed and 400 were injured by accidents in the marble quarries of the United States during 1920. A total of 4,438 men were employed, each man averaging 294 days during the year. The total number of shifts was 1,304,552. An increase of 11 percent as compared with 1919 was noted in the number of employes and the total number of shifts. More men were employed at the marble quarries than in any year since 1916, and the total shifts worked was larger than during any year since 1915.

One-hundred and thirty-two of the injuries occurred in and about quarry pits and 268 at rock dressing plants. In the pits 27 men were injured by handling rock, 22 by flying objects, 22 by drilling and channelling, 15 by machinery, 12 by falls of persons, and 11 by timber or hand tools. At the outside rock-dressing plants, 162 men were injured by handling rock, 30 by machinery, 16 by nails and splinters, 15 by haulage accidents, 13 by falls of persons, and 11 by flying objects.

Two-hundred and thirty-one men were injured at quarries in Vermont, 29 in Tennessee, 26 in Georgia, and 24 in Missouri.

Marble quarries employ approximately five percent of all quarry workers in the United States.

ALABAMA MINE RESCUE MEET

THE FOURTH ANNUAL mine rescue and safety-first meet will be held at Birmingham, August 6, under the auspices of the Alabama Safety Association, the Coal and Metal Operators' Association of Alabama and the Birmingham rescue station of the U. S. Bureau of Mines. The contests will be staged at Woodrow Wilson Park. J. J. Forbes, mining engineer of the bureau's station, will be in charge.

COAL PRODUCTION AND DISTRIBUTION

BITUMINOUS coal production during the middle of July, or at the end of the first 161 working days of the year, was 63,000,000 tons behind that of 1920, 21,000,000 tons behind that of 1919 and approximately 87,000,000 tons behind that of the war years. Compared with the last four years, the deficiency was 65,000 tons.

Production during the first 161 working days for five years is shown (in tons) in the following table:

1917	285,315,000	1919	225,132,000
1918	297,595,000	1920	267,841,000
1921	204,527,000		

June anthracite production, 6,031,937 gross tons, was below that of 1920 and below the general average of the last eight years, but the cumulative output of the first six months was more than either the average of the last eight years or the production of the corresponding periods of last year. Average June production of the 1913-1920 period was 8,008,000 tons, and the average output of the first six months during the same period was 44,800,000 tons. Figures are shown in detail in the following table:

Anthracite Production

Year	June production (*Net tons*)	Cumulative production to June 30 (*Net tons*)
1913	7,911,000	46,200,000
1914	8,147,000	43,800,000
1915	7,157,000	42,000,000
1916	7,327,000	43,400,000
1917	9,103,000	48,600,000
1918	8,855,000	50,100,000
1919	7,404,000	39,900,000
1920	8,158,000	44,300,000
1921	7,786,000	45,500,000

The single item of 500,000 tons, which is the increase in anthracite shipments during June as compared with those of last year, does not cover the situation fully. The Anthracite Bureau of Information, in a statement analyzing the situation, points out that while total shipments this year exceed those of last year by this amount, shipments of steam sizes for the first quarter of the current year have declined more than 750,000 tons. This means that shipments of domestic sizes for April, May and June this year were 1,255,000 tons greater than last year; or, in other words, than the domestic consumers of anthracite have 1,255,000 tons more coal in their bins than they had at this time last year, and are in a correspondingly better position to withstand an arduous winter. This is a very important consideration from a marketing and distribution standpoint.

There is both a good and a bad phase to the failure of commercial concerns to lay in their stock of steam-producing anthracite. The good phase lies in the circumstances that the steam coal has already been produced and is held in stock piles at the mines. This is necessarily so, since steam-size anthracite, which competes with bituminous and is always sold at a loss, must necessarily be produced along with the domestic sizes. The unsatisfactory phase of this situation lies in the fact that, even though the steam-size anthracite has been produced, it has not been shipped in satisfactory quantities to those who will need it this winter, and either the resumption of general business or continued cold weather may cause a sudden demand for steam coal beyond the power of the railroads to transport.

FUEL YARDS' ACCOUNTS O. K.

"COMPLETE and comprehensive," are the terms applied to the accounting system of the government fuel yards at Washington by the U. S. Bureau of Efficiency, which prepared a report on the methods of operation and cost accounting employed by the yards, at the request of Dr. H. Foster Bain, director of the Bureau of Mines. The National Retail Coal Merchants Association had adopted resolutions criticising the accounting system of the yards, and Congressman Walter H. Newton of Minnesota asked that the matter be looked into. The Bureau of Efficiency thought that the accounts of the yards were not only complete and comprehensive, but better than the cost statements of any commercial yards which had come to its attention. The report says in part:

"In our opinion the accounts of the Government Fuel Yards are complete and comprehensive, reflecting the investment in fixed and working capital and the results of operation, including the cost of each department.

"Subsidiary records are kept setting forth the cost of operating each main activity of the yard; and the cost per ton handled for each such activity is computed monthly. In connection with garage operations, records are kept showing the cost of operating each motor vehicle and costs per mile, per trip, per ton and per ton mile are computed monthly for each motor truck and for each class of trucks. Monthly summary operation statements are also prepared, setting forth the sales of fuel by types, the selling price, the prime cost and the gross margin, and the operating expenses of the yard. The costs as stated by the Government Fuel Yards are complete, in that they reflect the total expenses that may legally be added to the prime cost of fuel in fixing selling prices. In fact, the Government Fuel Yards has been conservative in fixing its prices, for it has charged currently into its operating expenses the entire cost of maintenance and operation capital items. No criticism could be made of a plan whereby such items were depreciated over a period of their estimated life.

"The criticism which has been made from time to time of the Government Fuel Yards to the effect that its costs are not complete and that, in competition with commercial yards on a commercial basis, its operations would result in a loss, is not justified in our opinion, for none of the published cost statements of commercial yards that have come to our attention sets forth handling costs per ton that compare favorably with the costs estimated above for the Government Fuel Yards, operating as a commercial yard."

MAY COAL FATALITIES.—During May, 158 men were killed at coal mines, as compared with 163 during the parallel month of 1920. The decrease was 3 percent. The rates was 3.79 per million tons produced, however, whereas last year's rate for the same month was only 3.42.

The average May fatality rate for the last eight years has been 176, or 3.76 per million tons produced.

Of the total fatalities 41 occurred in anthracite mines and 117 in bituminous mines. West Virginia led the bituminous states with 36 fatalities; Pennsylvania came second with 27; Illinois, third, with 16, and Indiana and Ohio followed with 6 each.

During the first five months of the year 806 men were killed at coal mines, a decrease of 68 fatalities, or 7.8 percent, as compared with the corresponding period of last year, but production was considerably greater last year, and the fatality rate per million tons produced was only 3.57, whereas the rate for the first five months of 1921 was 4.01 per million tons.

UTILITIES SILENT ON HOOVER'S PLEA

NO RESPONSES had been received up to July 20 to Secretary of Commerce Hoover's letter of July 8 addressed to public utilities companies and urging them to make advance purchases of their winter's coal supply. The secretary's letter was along the same lines as the one previously sent by Chairman Clark of the Interstate Commerce Commission to the railroads and other public utilities, and he urged that serious consideration be given the commerce chairman's suggestion.

"I cannot but feel that the Interstate Commerce Commission, in the face of warnings they have sent out in this connection, would not be disposed to give any priority in the event of development of a serious transportation situation as a result of business recovery in the autumn," Secretary Hoover said in his letter to the utilities companies. "It seems to me, therefore, to be obvious that the public utilities companies, both in their own interest and for the protection of the public, should make early provision for stocks of coal sufficient to carry them over a critical period."

In his communication the secretary took occasion also to reiterate his previously expressed opinion that current prices of bituminous coal at the mines were not too high, and that any apparent trouble in this regard was due to the prevailing general business depression. "This is proved by the fact that a number of operating coal companies are making no profit whatever," he said.

Emphasizing the fact that indications point to an unwarranted tardiness in the purchase of coal, making large demands in autumn inevitable, Mr. Hoover said that three factors working together might possibly produce "a most serious situation." These factors were outlined as follows: a large increase in the percentage of disabled cars, the recovery of business and the inability of the railroads to finance their operations.

COAL MEN'S OFFER TO BE REJECTED

SECRETARY of Commerce Hoover does not intend to accept the offer of the coal industry to compile and submit statistics voluntarily. He divided statics of the coal industry into three classes, namely, those covering production, those covering stocks and those covering pr ces. He feels that statistics regarding production and stocks are being collcted satisfactorily by the United States Geological Survey, and that as regards prices the public would be inclined to withhold confidence in figures compiled by the coal industry itself. It appears, therefore, that the new Fuel Board of the Bureau of Foreign and Domestic Commerce will secure its statistical information from sources other than those under direct control of the coal industry.

Delay has arisen in the selection of a chief for the Fuel Board, which is a factor in the secretary's plan for aligning the coal industry to the Department of Commerce. This delay is caused by the necessity of giving precedence of consideration to other matters of more immediate importance to commerce as a whole than the rendition of assistance to the coal business alone. The shipping situation and the problems connected with international cable lines are considered of greater immediate importance.

Three men have been proposed as head of the Fuel Board, which will handle oil problems as well as those affecting coal.

MISSOURI METALS TO BE EXHIBITED

MEMBERS of the Tri-State Chapter of the American Mining Congress will co-operate with the Missouri Geological Survey in sending a complete exhibit of the state's mineral resources to the Sedalia Centennial and State Fair August 8-20. The exhibit will be divided into classes, of which the major divisions will be gold, iron, lead and zinc, clays, building stone, cobalt, and nickel tripoli. The Joplin district will be represented with exhibits of lead and zinc ores. Typical ores from Bonne Terre and from Flat River will be displayed. There will likewise be a complete display of iron ores from Iron Mountain and Pilot Knob, two old mines which it is estimated have yielded $10,000,000 worth of ore.

Information concerning Missouri's standing in mineral production will be part of the exhibit. Cobalt-nickel ores from Frederickstown, which are among the most complex in the country, will be shown. A collection of interesting minerals has been made under the personal supervision of H. A. Beuhler, state geologist. It is planned to have at least one representative of the Department of Geology present at the Missouri exhibit at all times to asnwer questions and give out official information.

POSSIBLE NEW CALIFORNIA OIL FIELD

UNDISCOVERED valuable oil fields may exist in California, according to the conclusion reached in Bulletin 721 of the U. S. Geological Survey, prepared by W. A. English. Several areas in which oil may possibly be obtained are pointed out, most of them lying in San Joaquin Valley.

The area studied by Mr. English embraces about 550 square miles in northwestern Kern County, and includes the Lost Hills, North Belridge, and New McKittrick Front oil fields and contiguous territory. Actual conditions in the developed fields, however, are treated lightly, because the California State Mining Bureau will soon make a detailed report on this subject, but the geology of the untested areas is treated at great length.

"In the hills, there are no large bodies of the oil-bearing Maricopa shale folded and overlain by sufficient cover to retain any oil that may have been formed in it," the report says, "but in several areas in the valley there may be buried fields in which the Maricopa shale lies within reach of the drill."

GOLD AND SILVER IMPORTS AND EXPORTS

THE FIRST SHIPMENT of gold from the United States to Europe since the beginning of the year was made early in July, when $1,123,783 was sent to Sweden. The total amount exported since January has been $7,934,517, which, in addition to the above, included $5,522,204 to North America, $24,300 to South America, and $1,263,934 to Asia. Imports from a'l countries from January 1 to July 10 totaled $359,490,-882, of which $13,130,795 came in during the first ten days of July. Silver exports during the first ten days of July amounted to $1,387,350, and from January 1 to July 10 to $22,428,945. Imports during the first ten days of July amounted to $1,488,086 and from January 1 to July 10 to $28,938,449.

A BUG'S EYE VIEW OF WASHINGTON

By Ira L Smith

UNCLE SAM is getting Tighter than a bureau drawer after a rain.

His nose is flattened out against the ground on the Trail of Economy.

Everything is set for the Grand Operation of cutting the gizzards out of a flock of the country's Expenditures.

The necessity for this Nickel-hounding Campaign hit the administration some time ago when the Call came from out in the Sticks that taxes will have to be peeled considerable if the Villagers are to be made merry.

President Harding immediately set about to locate a gent sufficiently miserly to play Watch-dog to the nation's spending money. He finally found the Man to plug the Hole in the Coffer.

This man being none other than our Cussing Friend, Helen Maria Dawes, alias Charles G., who first came into the General Limelight by the front-page route when he turned the air blue with unlady-like language at a recent Congressional Investigation.

Lots of ginks spend useless lives swearing at things, but that's no sign that a man can't use Torrid Phrases and still solve problems in as good fashion as the birds who cut their talk in parlor style.

Dawes makes a practice of grabbing a Job by the left hind leg and Getting Rid of it, the cussing being merely Incidental.

So, right after Harding handed him the Job, Charley took hold of the Purse Strings with a large portion of Vengeance and a Firm Grip.

"Firstly," as the stuttering old parson out home used to stumble into his Sunday morning verbal marathon, Damnation Dawes ran down to the White House.

Being handed a seat at the Cabinet meeting, he told the President, Cal Coolidge and the fellows that work on the Cabinet all about what's the matter with things.

Then he laid back his ears, curled his tonsils up out of the way, and let out a Blare that was heard seven miles south of the Equator, calling the most important hired hands in Washington to come around the next afternoon. The idea being that they would then be shoved into the Economy Pool to get their executive clothes all soaked with Thrift.

Six hundred of them showed up and cheered right lustily when the President and his various right and left bowers bowed their way to choice seats on the platform.

The President opened the services by talking a bit about things in general and then he introduced the bundle of animated Fireworks to the crowd.

Dawes charged upstage and then took wing from the edge of the platform, making a forced landing in the pit with the newspaper men, right down in front of the assembled customers.

He stood there for a moment. It was the last moment of the afternoon that he was quiet. Short as it was, it gave the folks a chance to give the Bag of Pepper the grand old up and down.

He looks like just about the opposite of the sort of gent you'd think would have been given his job.

Folks that have never laid their blinkers on him must have the idea that he is like one of these florid faced, purple veined, bay windowed individuals like run around banks and stock exchanges.

But Tarnation Charles is a product of an entirely different Mould. He's nothing like that pudgy tribe.

He is a lean gent with funny, glistening eyes, a mania for stock ties and a lot of eternal jazz within his self. If he were fatter, he would be mistaken for an Insurance Man; if he were slimmer, he'd pass for a Book Agent.

But, in spite of the way in which he has played hookey from carrying the appearance of a financier, he is probably the best Money Trainer in seven or eight States and the District of Columbia. He can take an average garden-variety dime that has had nothing more than a common school education and have it jumping through hoops and playing dead in less than five minutes.

And the best of it is that he can talk so as to ease the idea of it all beneath other people's Derbies.

The air in that auditorium has not yet readjusted itself since the General churned it up. What holes were not plowed through it by his Verbiage were cut out by the Swinging of his arms. Flaying around like a windmill in a gale, he so narrowly missed the chin of a staid colonel, sitting close by, that the officer hasn't had to shave since that very day. Whiskers were just naturally scared clear back in his O. D. hide.

After shadow-boxing a couple of rounds at himself and the colonel's mustache, Charley leaped into the body of his Oratorial Effort.

Mainly, he told the assembled co-patriots that they were coming into a New Order of things into which entered the necessity of tossing salt on the tail of each stray dollar.

And now the Miser's Grasp is becoming an Epidemic in official Washington.

"Let no guilty sou escape," is the current cry.

Sitting in the shadow cast into these early days of the move by the coming event, it is interesting to ponder upon the Thrifty Times that stretch out ahead.

Bureau chiefs will be forced to forget all they ever knew about money.

Filling out a Treasury check will be a Criminal Offense.

One simoleon will do the work that two did before.

The capital is going to take on the spend-thrifty atmosphere attitude of the poorhouse.

All coming in and nothing going out.

Money bags are to be remodeled into tobacco pouches.

The unaccustomed sound of Coins rattling against each other will turn men's faces into ashen pallor.

Dollar bills will be Idolized more than beautiful women.

The nation is going to run on the bare rims of its reputation, or thereabouts.

Average people will not any more dare to think of fifteen dollars at once than to ponder on the extent of the universe or the origin of the species.

All the doors and windows of the Treasury Building are to be plastered up.

The jail-house will await the gent that looks as though he ever spent even one thin dime of the Government's without Showing just cause.

The Comptroller of the Budget has a soft outlook on life. Soon the fellow that holds that job will have nothing to do but sit on top of the Accumulated Lucre. Nobody will have courage enough to ask him for a Bit of the pile.

The country's going Scottish by a large majority.

CONTINUED PRIVATE OPERATION OF ROADS CALLS FOR ECONOMY

By C. H. Farrell.

ONE OF THE LAST WITNESSES to be heard by the Senate committee investigating the railroad situation, before it adjourned until late summer, was S. Davies Warfield, president of the National Association of Owners of Railroad Securities. Nr. Warfield reviewed in considerable detail railroad legislation of the last few years and the causes leading up to it and outlined what he conceived to be the present situation, reaching thereby the conclusions that the question for the moment is: "Can sufficient revenue be obtained from rates and fares that will be considered by the public and the shippers to be reasonable, and will these rates bear a relation to the price obtainable for the articles transported as shall not impede commerce? Or will part of the money required to meet the necessities of transportation have to be supplied, in the public interest, by taxation?"

He stated that the carriers must, if private operation is to continue, produce every possible economy in operation, and that if an amount of net operating revenue requisite to meet the necessities of the railroads could not be made up through substantial lower cost of transportation without economies there is nothing left but to meet it partly through taxation. It is his belief that with fair wage readjustment such economies can be instituted as will not only make up the difference between the present return and the six per cent requirement, but with normal business conditions there can be a substantial decrease made in railroad rates.

Mr. Warfield then passed to the absence of any agency from which there could be ascertained economic data as to the relations of rates of freight to the cost of manufacture or of production and to the price of commodities laid down at the point of ultimate consumption. He also stressed the necessity of Congress permitting consolidations of railroad properties with the approval of the commission, without awaiting a complete country-wide plan, as is now required.

Mr. Warfield believes that great economies may be effected in the following ways: first, by effecting organizations of the officials of railroads in each of the four territories now recognized by the commission, to act in an advisory capacity; and second, through a central agency or corporation to supply equipment to the railroads without profit to the corporation, and to perform other services under the supervision of the commission.

In each of the territories he would have a board organized consisting of five or more railroad officials taken from either the presidents or vice-presidents of the companies concerned. Each board would then form committees from among its various railroads which would study and report such economies as could be effected in the operation of railroads within the particular group without limiting incentive or initiative, and also advise in respect to establishing coordination of facilities in service which, without adversely affecting competitive service, would establish relations between the carriers in each group calculated to secure substantial economies. It is suggested that each group could have ten committees dealin with such subjects as joint use of terminals, yard and other facilities of the railroads, standardization and use of equipment, joint purchases of fuel and supplies, and any other economies which the commission might suggest.

Mr. Warfield's second proposition is for an organization which would operate without profit for the purpose of acquiring and distributing equipment to the carriers. Through an agency of this kind, which would be similar to the National Railway Service Corporation organized after the passage of the Transportation Act, it is thought that great economy could be effected in the purchase of equipment, and that such equipment could be supplied to the carriers on a conditional sale and lease basis up to their normal requirements and additional equipment kept on hand which could be supplied to the carriers on a per diem or lease basis to meet seasonal or abnormal requirements in time of congestion. It is said that this method of handling equipment would require materially less cars and very greatly reduce railroad capitalization and operating costs, and would be of particular benefit to the smaller lines. Mr. Warfield believes that if such an organization be created Congress should require, in the event of a receivership, that the court or receiver continue agreements made by the carriers in the purchase of equipment as this would provide a more extended and stable market for the corporation's certificates or other obligations. He also desires that the powers of the corporation be extended to the issue of securities for the acquisition of terminals and facilities which may be useful in interstate transporation and that such a corporation act as an agency of the Interstate Commerce Commission in respect to the use of excess earnings, that it be allowed to borrow and loan money to the carriers and to perform any functions which might be assigned to it by the commission.

EARNINGS—A statement issued by the railway executives, based on reports filed with the Interstate Commerce Commission, shows that in May of this year the carriers enjoyed a net operating income of $37,246,000, which was approximately $7,997,000 more than in April and which is the biggest month since last November. In April there were 91 roads having operating deficits, while in May there were 80. Using the tentative valuation for rate-making purposes fixed by the commission in the advanced rates case the return for May would be at an annual rate of 2.41 per cent compared with 2.2 percent in April, these figures for May, however, being 59.8 percent short of the amount contemplated by the Transportation Act. The retrenchments now in effect on the roads are reflected during May when the operating ratio was 8.54 percent compared with 86.69 percent in April and 87.19 percent in March. The total operating revenues during May were 2.8 percent less than in 1920, but the operating expenses showed a reduction of 13.2 percent, and the operating income $37,246,000 is compared with an operating deficit last year of $5,519,000. Taking the nine months since the guaranty period expired, the carriers have made an annual return on their tentative valuation of 2.41 percent instead of the 6 percent expected under the Transportation Act. All districts showed a return, that for the eastern being 2.29 percent, southern 3.35 percent, and the western 2.30 percent. Reductions in operating expenses were also noted in all districts, the east leading with a 14.9 percent reduction, the west coming next with a decrease of 14 percent, and the south being last with a decrease of 6.3 percent.

TONNAGE—The Interstate Commerce Commission has released some interesting figures regarding the nature of the tonnage which goes to make up the total carried by the railroads. The figures in question are for the first three months of this year, and show that there was originated on the Class 1 roads of this country during those three months 2,404,370 carloads of traffic listed as products of mines out of a total of 6,224,990 carloads of all commodities. The number of tons of 2,000 pounds is 115,836,502, out of a total of 217,967,619. This is larger than any other group of products, the nearest one being manufactures and miscellaneous, which originated a total of 1,546,482 carloads, or 39,726.611 tons. This latter classification includes refined petroleum and its products, pig iron, rails and fastenings, and many other commodities which are indirectly products of the mines. Taking the total revenue freight carried we find that products of mines were responsible for 4,318,449 carloads out of a total of 11,731,274, or 206,296,128 tons out of a total of 401,818,363.

RATE REDUCTIONS—The railway executives have issued a statement and devoted a large part of their last issue of "American Railroads" to the so-called rapid progress in the readjustment of freight rates. The Transcontinental Freight Bureau has reported that, up to June 9, 1,272 reductions have been made in westbound domestic rates, 153,319 in eastbound rates, and 120 in export and import rates. These reductions affect grain, iron and steel, food products, lumber and many other commodities. In the last year the Western Trunk Line Committee has considered 1,200 subjects, over 90 percent of which were reductions concerning crushed rock, gravel, building materials, grain, coal, lumber, live stock, feeds, and molasses. Three hundred and forty-three applications proposing reductions were approved, and the range of percentage reductions ran from 5 percent to 70 percent.

The Southwestern Freight Bureau reports that 159 out of 168 cases acted upon involved rate adjustments. These figures do not include any multiplication of the number of rate reductions by the number of points to which they apply. The New England Freight Association reports action on 348 proposals, 80 percent of which are reductions, and the Trunk Line Association of New York states that it has handled 2,662 rate proposals, of which 2,463 were approved. The carriers conclude with the statement that there can be no general reduction of rates this year and the best that can be hoped for is a readjustment of inequalities and maladjustments which have resulted from the successive blanket increases.

COAL SUPPLY—The commission has called the attention of the Association of Railway Executives, the American Electric Railway Association, the National Committee on Gas and Electric Service and the National Electric Light Association to the fact that the production and shipment of bituminous coal has been and is disappointingly low. The difficulties of last year during the late summer and fall which grew out of the general disinclination to buy and provide necessary supplies earlier in the season is emphasized, and these organizations are told that in the interest of avoiding a repetition of such circumstances the commission believes it important that all concerned secure as promptly as possible a reasonable reserve against the difficulties that may be presented later in the event of a car shortage. The commission states that it realizes the impracticability of putting an entire winter's supply of coal into storage, but it believes that an accumulation can be made now, while transportation is easy and cars are idle, which will help out greatly in the event of any trouble later.

SUMMARY.—The general situation seems to be one of "watchful waiting," and there is not in sight at the present time any indication that the shippers will get relief from the present scale of rates, although the commission has just heard arguments in an important live stock case where the shippers contend that the present scale is killing the industry. The examiner who heard this case has proposed that the commission make a finding that while the rates in question in the aggregate are not excessive from a strictly transportation standpoint, they are nevertheless, unreasonable from an economic standpoint, and the carriers should favorably consider the making of substantial reductions for the benefit of the live stock industry and business generally. If this report is adopted it ought to indicate a swing towards the shipper's side of the much argued question of rates and would seem to hold out some hope for the future. Meanwhile, the latest earnings are more promising and the economies of private operation are beginning to be felt in substantial reductions in operating expenses, although the big savings in wages do not become effective until the earnings for July become available in the early fall. Any change in legislation before next winter, such as a repeal of the guaranty section of the interstate commerce act is quite remote. The general inquiry into the transportation situation has been suspended and the work before Congress on tariff and taxation problems will keep that body fully employed for the balance of the present session. Tonnage continues to be a disappointing item, but the demand for cars is increasing and the surplus number on hand is gradually getting back to normal.

OIL STATION'S PROGRAM TO BE ENLARGED

THE STATE OF OKLAHOMA WILL PAY for intensified and enlarged investigations in petroleum at the U. S. Bureau of Mines station at Bartlesville. H. H. Hill, superintendent of the station, has announced that he is ready to employ a petroleum engineer, an expert driller, a natural gas engineer and an assistant petroleum engineer, and persons interested should apply direct to him. A civil service examination will not be necessary since the state of Oklahoma is furnishing the funds.

HELIUM PLANT CUTS EXPENSES

IN THE INTEREST OF ECONOMY, the Bureau of Mines has ordered a reduction in the staff of Helium Plant No. 3 at Petrolia, Texas, and the placing of the heavy machinery in a stand-by condition. It is the opinion of the Bureau that on account of a lack of funds it would be better to work a smaller unit while accumulating data necessary for converting the plant into an economical operating plant than to attempt to continue operations at the present time, with machinery planned primarily for experimental work.

This it is possible now to do since the large production plant at Fort Worth, operated by the Navy, is in operation. Both plants have been drawing on the same supply for gas, and it will simplify the operations of the Lone Star Gas Company, which produces it, to have Plant No. 3 held in reserve while the Fort Worth plant is being brought up to full-scale steady operation, since success is contingent upon a steady flow of gas of fairly uniform composition.

Plant No. 3, while undergoing trials, has produced helium of 60 percent purity and has made repeated runs of considerable duration yielding gas of lower purity. While by reprocessing it is possible to bring such gas up to the standard for balloon use, this would increase the cost and it has been the expectation of the Bureau of Mines that first run gas of satisfactory purity could be obtained. As a war measure it was considered wise to build on a sufficient scale so that the experimental plant could be transformed directly into an operating unit, but with the close of the war and the completion at Fort Worth of a production plant which to a certain extent meets present needs, it is more economical to conduct the experimental work on a smaller scale. The purpose of continuing it is to provide ultimately a plant which shall furnish helium at a much lower cost than is possible by any known operative system. The importance of having a supply of non-combustible balloon gas in wartime, and its utility in times of peace, is so great that it is necessary that every means of reducing the cost be fully studied.

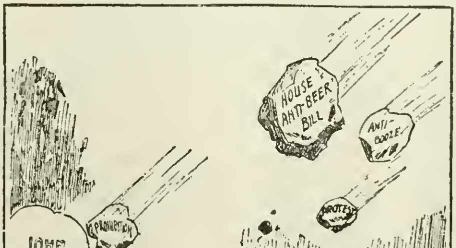
TAXATION AND TARIFF MEASURES HOLD CONGRESSIONAL SPOTLIGHT

THE TARIFF BILL and the soldier's bonus bill have held the spot-light in Congress during the month. Other important legislation was sandwiched in between the discussion of these two important measures but the passage on July 21 of the tariff bill by the House is the only important legislation that has received action, by either house. The vote for the recommitment of the soldier's bonus bill temporarily ended discussion upon that measure.

From the reconsignment of the Frelinghuysen Coal Bill to the introduction of the tariff bill Congressional debate has been voluminous and vitriolic. Sarcasm has been rampant. Senators have run the gamut of emotion from calling each other names to inviting their fellow senators into the corridor for proper settlement of issues. When things had waxed too warm, Senator Lodge made the motion that the Senate adjourn and not return until the first of September. That would permit the House to finish with the tariff schedules, the Senate returning in sufficient time to undertake the consideration of the bill by September first. His resolution was overruled by a large majority and senators and congressmen will remain in continuous session notwithstanding the heated weather and the heated debate. In spite of both the weather and the debate, things have been moving at a very rapid rate.

The most important piece of legislation, so far as the mining industry is concerned, is the tariff bill, which places a duty upon pyrites, manganese, molybdenum, tungsten, bauxite, magnesium, quicksilver, nickel, tin, lead, zinc, graphite, fluorspar, kaolin, antimony, mica, potash, petroleum and magnesite. Under the rule adopted by the House on July 13 for the consideration of the tariff bill, only dyes, hides, cotton, oil and asphalt schedules were open to amendment on the floor. The final vote on the bill was taken July 21, when it passed the House by a vote of 288 to 127.

The two schedules which have received the most criticism have been the dye schedule and the oil schedule. The bill as voted on July 21, will go immediately to the Senate Finance Committee, which has been considering tax legislation. This committee will immediately begin hearings, but it is not anticipated that the tariff bill will become a law before the first of November.



—Cleveland Plain Dealer

"GET IN YOUR HOLE, JOHN, THEY'VE GOT YOUR RANGE"

While the coal industry is temporarily out of the limelight, Congress has not forgotten it. The Senate Sub-Committee on Education and Labor, which is investigating the Williamson Field, West Virginia, coal trouble, has been holding sessions and a great deal of sensational and interesting information is being brought to light. This committee began hearings on July 14 and many mine operators have been heard as well as representatives of the United Mine Workers of America.

Many years ago the American Mining Congress organized a committee for the purpose of outlining plans for the revision of our mineral land laws. This movement finally culminated in a bill being introduced on July 12, providing for mining law revision. Representative Arentz of Nevada introduced a bill which is practically identical with the draft prepared by this committee and engineers appointed by the United States Bureau of Mines.

Mr. Jones, of New Mexico, has introduced a bill changing the period for annual assessment work from the calendar to the fiscal year.

The Frelinghuysen Seasonal Coal Rate Bill was subjected to considerable debate, several amendments being offered, which are reviewed in this issue.

The soldiers' bonus bill consumed many hours of senatorial time, and before recommitment was made the subject of many bitter attacks. Senators found ample opportunity in the discussion of this bill to get out of their system personal venom and political capital platforms.

Representative Raker, of California, on July 15, introduced a bill to extend the provisions of the War Minerals Relief Act. This measure incorporates practically all the amendments to the bill, introduced by Senator Shortridge (S. 843) which amendments are understood to have received the approval of the Interior Department. It is not likely that Mr. Raker's bill will make much progress, in view of the fact that the

Shortridge measure has already received consideration and has been granted hearings by the House Mines and Mining Committee. It is understood that Mr. Robinson, War Minerals Relief Commissioner, is of the opinion that very little progress can be made in the adjudication of the claims still remaining before the War Minerals Relief Commission until legislative action by Congress is taken. It is anticipated that the Shortridge bill will receive final consideration by the House Mines and Mining Committee as soon as the tariff and tax legislation, now pending, have been concluded. The Dolbear case, involving the right of the Secretary of the Interior to review awards and grant additional awards to war mineral claimants, has been placed before the assistant controller general under the reorganized system of handling government finances. It is anticipated that when this decision is handed down it will not make any great amount of difference in the method of handling claims. "T. 'N' T."—Tariff and Taxation—the biggest national issues, will continue in supreme power and the mining industry which is so vitally interested in each will do well to carefully follow developments at Washington. The following bills of importance to the mining industry have been introduced since our last issue:

TARIFF

H. R. 7456. Introduced by Mr. Fordney, referred to Committee on Ways and Means of the House. The tariff bill is reviewed in a special article beginning on page 306 of this issue of the Mining Congress Journal.

H. R. 7802. Introduced by Mr. London; referred to the Committee on Ways and Means. The bill provides that no duty shall be levied, collected, or paid on any article when imported from any foreign country into the United States or into any of its possessions unless the following conditions and each of them shall prevail at the time of such importation in the industry or branch of agriculture producing similar articles within the United States or within its possessions, namely: (a) The working day for any wage worker shall not exceed eight hours; (b) the working week shall not exceed forty-four hours; (c) at least, one and one-half days of continuous rest each week is accorded to the wage worker; (d) no child under the age of sixteen years is employed; (e) wages and other terms and conditions of employment are determined by collective bargaining. Section 2 that all laws or parts of laws in conflict with this act are hereby repealed.

REVENUE

H. R. 7867. Introduced by Mr. Mills; referred to the Committee on Ways and Means. This bill amends Title 3 of the 1918 Revenue Act by adding after Part 7 a new part, number 8, which provides that after January 1, 1922, in lieu of the taxes imposed by Section 211, but in addition to the normal tax imposed by Section 210, there shall be collected and paid for each calendar year upon the spendings during the calendar year of every individual a tax equal to the sum of one percent of the amount by which spendings exceed $2,000 and do not exceed $4,000, increasing one percent up to forty percent of the amount by which spendings exceed $50,000. In computing the amount of taxes payable by persons residing together as members of a family, the spendings of the wife and the spendings of each child under eighteen shall be added to the spendings of the husband or if he be not living to the spendings of the head of the family. The bill specifically exempts from taxation all the ordinary and necessary expenses and costs actually paid during the taxable year in carrying on any trade or business, including a reasonable allowance for salaries or other compensations for services rendered and including rentals, all taxes actually paid within the calendar year, including taxes assessed against local benefits of a kind tending to increase the value of the property assessed, contributions or gifts, amounts paid for medicines and dental services, all amounts actually invested during the taxable year in deposits, loans, securities, and real estate, but not including interest on unpaid balances, amounts actually paid on account of the purchase of a home for the use of the tax payer, premiums upon life insurance, etc. Section 211 of the Revenue Bill shall remain in effect up to and including December 31, 1921, except that the highest rate of surtax shall be thirty-five percent of the amount by which the net income exceeds $72,000, all higher rates on net income being repealed.

MINING LAW REVISION

H. R. 7736. Introduced by Mr. Arentz; referred to the Committee on Mines and Mining. The bill is to be known as the *United States Mining Act*. It provides that every full mining claim upon unsurveyed lands shall be located in the form of a square containing forty acres. They may also be located in squares containing ten acres. Other fractional claims shall be located in the same manner as full claims. A fuel mining claim on surveyed lands shall be a quarter-quarter section, but legal subdivisions of forty acres may be subdivided into ten-acre tracts. Subject to limitations discovery of valuable mineral shall not be necessary in order to locate and hold a mining claim, but when a claim is recorded in the United States Land Office the records shall include a sworn statement as to whether or not a discovery has been made. A claim located without discovery on land may be held for five years without discovery after which it has to be open to relocation. Upon failure to make discovery within the period of five years the holder of the claim shall have the right to retain the claim for further annual terms, not exceeding five years, by payment into the United States land office in advance $50 for each acre or fraction thereof, which payment shall be in lieu of any further requirements for assessment work. If during the first five years discovery is made, the locator should file a sworn statement as to that fact in the United States land office. If discovery of valuable mineral is made by drilling more than one hundred feet in depth, affidavits by at least two persons thoroughly acquainted with the facts should be submitted. Where no proceedings have been initiated in the United States land office to acquire a nonmineral estate in public land classified as nonmineral, mining claims may be located thereon with or without discovery, but in the absence of a discovery a subsequent location on such land shall not be recognized if made by the original locator within two years after the prior location had become invalid. One discovery shall be sufficient to support the holding and patenting of a maximum of four contiguous full claims, aggregating one hundred and sixty acres. Final entry and payment shall be made for all mining claims within seven years from the date of the original location. All claims must be distinctly marked so that their boundaries can be readily traced. Notices of location shall contain the names of the locators, date of location, and description of claim. On each claim located after the passage of the act not less than $5 worth of labor shall be performed and improvements made during each year for each acre or fraction thereof comprised in such claim; or in lieu of the performance of labor $5 for each acre may be paid each year into the United States Land Office and until a patent has been issued not less than $100 worth of labor shall be performed during each year. Subject to the existing extralateral rights of mining claimants or patentees, the holder or patentee of a mining claim located hereafter shall have the exclusive right of possession and enjoyment of the surface held by him and of the mineral covered by this act which lie beneath the claim and within vertical planes passing through the surface boundaries of said land, but shall not have the right to follow any mineral deposit beyond said planes. And the holder or patentees of claims heretofore located shall have similar exclusive possession of all the minerals covered by this act which lie beneath the claim and within vertical planes passing through the surface boundaries of said land and is not covered by any existing extralateral rights. The bill also very carefully outlines the proceeding for patent, description of claims, surveys and carries a section covering land required for mining purposes other than mineral claims. Section 14 provides that all moneys paid into the United States land office in lieu of annual labor or improvements and for extension of tenure beyond five years where no discovery has been made, are reserved, set aside, and

IMPORTANT BILLS REVIEWED IN THIS ISSUE

TARIFF:
- **H.R.7456: Mr. Fordney (Metals Schedule)**
- **H.R. 7802: Mr. London (International Labor)**

REVENUE:
- **H.R. 7867: Mr. Mills (Amending Revenue Act of 1918)**

MINING LAW REVISION:
- **H.R. 7736: Mr. Arentz (Creation of United States Mining Act)**

COAL:
- **H.R. 7400: Mr. Luce (Quality of Domestic Anthracite Coal)**
- **S. 2125: Mr. Bursum (Agricultural Entries on Coal Lands)**
- **S. 1806: Mr. Frelinghuysen (Amending Seasonal Coal Rate Bill)**

PUBLIC LANDS:
- **S. 2013: Mr. Bursum (Protection to locators of petroleum, mineral oil, or gas lands)**

ANNUAL ASSESSMENT:
- **S. 2214: Mr. Jones of N. M. (Changing time for doing annual assessment work)**

MISCELLANEOUS:
- **S. 1853: Mr. Bursum (Utilization Waters Colorado River)**
- **S. 1915: Mr. Norris (Creation of Farmers' Export Financing Corporation Act of 1921)**
- **H.R. 7865: Mr. Huddleston (Regulation for prevention of unfair prices)**

appropriated as a special fund in the Treasury, to be known as the "mineral development fund," to be used and expended, under the direction of the Secretary of the Interior, within the State or Territory, and as nearly as practicable within the mining district from which payments were made, for general purposes of developing the mineral resources of the several mining districts. The following sections of the Revised Statutes are repealed: section 2322, relating to rights in mining claims; section 2323, relating to tunnel rights; section 2328, relating to rights initiated prior to May 10, 1872; section 2329, providing for the location of placer claims; section 2330, relating to placer claims; section 2331, relating to the survey and segregation of mineral lands; section 2332, relating to claims held for a statutory period and to liens on claims; section 2333, relating to the patenting of placer claims; section 2336, relating to intersectng veins; section 2338, relating to state rules for working mines; section 2341, relating to preemption and homestead entries of lands designated as minerals lands; section 2342, relating to the designation of agricultural lands; and section 2344, relating to rights acquired under prior existing law; also the Act of Congress approved June 6, 1874 (Eighteenth Statutes at Large, page 61), relating to expenditures of labor and improvements on mining claims; and the Act of Congress approved February 11, 1875 (Eighteenth Statutes at Large, page 315), relating to tunnel work, are hereby repealed: Provided that nothing contained in the act, except as expressly provided, shall be construed to affect any right heretofore initiated.

COAL

H. R. 7400. Introduced by MR. LUCE, referred to the Committee on Interstate and Foreign Commerce (*Quality of Domestic Anthracite Coal*). The bill prescribes certain standards of purity for domestic anthracite coal, the term domestic covering what is commonly known as broken, egg, stove, chestnut, and pea coal and makes it unlawful to ship to any state or the District of Columbia anthracite coal containing impurities determined by standard analytical methods, which amount in the shape of ash in the size known and described as broken coal of more than 5% by weight; 6% egg coal, 10% chestnut, 14% pea, or containing more than 15% by weight of sizes, including coal dust smaller than the size purporting to be thus sold, offered for sale, etc.

Sec. 3 provides that any person who delivers anthracite to a common carrier shall attach to each bill of lading a certificate setting forth the size of the coal so delivered and certifying that in quality it is not within the prohibitions of the act. That certificate shall accompany the bill of lading and be delivered to the consignee who is to hold it for one year after delivery, and upon request from any purchaser of coal may be displayed.

Persons engaged in the mining of domestic anthracite coal must file with the Bureau of Mines a statement of the standard of quality he is prepared to maintain.

Sec. 5, however, provides that it is not unlawful for any person to offer for sale, or ship any domestic anthracite coal under special contract with the person who is to consume the coal, provided such contract states the maximum allowable percentage of ash, and provided the certificate accompanying the bill of lading certifies that the quality is within the standard stated in the contract. The Bureau of Mines is from time to time to make examinations of domestic anthracite coal sold or offered for sale.

The power of the bill is vested in the Secretary of the Interior and provision is incorporated which carries a fine of not exceeding $200 for the first offense, and upon conviction of subsequent offenses not exceeding $300, or imprisonment of one year or both for violation of any provisions of the act.

S. 2125. Introduced by MR. BURSUM, referred to the Committee on Lands and Surveys. (*Agricultural Entries on Coal Lands.*) The bill amends the act which provides for agricultural entries on coal lands by providing that after the passage of the act unreserved public lands of the United States, exclusive of Alaska, which have been withdrawn or classified as coal lands, shall be subject to agricultural entry providing that in the obtaining or passing of title, a reservation is made to the United States of the coal in the land, with the right to prospect for, mine and remove the coal.

The bill carries special reservation in favor of the United States Government and full protection for the lessee and lessor.

S. 1806. This is the Frelinghuysen Seasonal Coal Rate Bill. Senator LaFollette proposed several amendments thereto as follows:

"(1) That it shall be unlawful for any common carrier subject to the provisions of this act to make or give any undue or unreasonable preference or advantage to any particular person, company, firm, corporation, or locality, or any particular description of traffic, in any respect whatever, or to subject any particular person, company, firm, corporation, or locality, or any particular description of traffic, to any undue or unreasonable prejudice or disadvantage in any respect whatsoever: Provided, however, That nothing in this act contained shall be construed to limit in any degree the jurisdiction of a state to prescribe the rates, fares, and charges which shall be imposed and collected for the transportation of passengers or property, or the transmission of intelligence by wire or wireless between points within said state, and otherwise to regulate such transportation and transmission, which jurisdiction is expressly recognized in the several states, and left unaffected by anything contained in this or any other section of this act."

An entire new section is to be incorporated as follows:

Sec. . That no order of the Interstate Commerce Commission, before or hereafter made, requiring, or purporting to require, any carrier to establish, put in force, or maintain any rate, fare, charge, or classification applicable to the transportation of passengers or property between points wholly within one state shall be of any force or effect whatsoever so far as respects such transportation.

Another new section is added which reads: One amendment provides: That section 15a of the Interstate Commerce Act be repealed, also that paragraph 3 and 4 of section 13 of the Interstate Commerce Act are repealed.

Senator King also offered an amendment which on page 1 and 11 strikes out certain words "greater or" and "yield as nearly as may be the same annual revenue for like movement as rates without seasonal variations" and insert in lieu thereof the words "increase the movement of coal and increase the revenues during such specified seasons or periods."

Senator King also proposes to, on page 2, line 7, after the word "designate," insert the following: "Provided, That in cases where the reduction of rates for specified seasons, or periods, result in benefits and advantages to a carrier or carriers, such benefits and advantages shall be taken into account in fixing the rates for other specified seasons or periods."

PUBLIC LANDS

S. 2013. Introduced by MR. BURSUM; referred to the Committee on Public Lands and Surveys. This bill provides that in no case shall any claim be held invalid, or patent be denied, to or for any lands located prior to February 25, 1920, under the mining laws of the United States, containing petroleum, mineral oil, or gas, solely because of the failure of the locator or locators thereof, to make discovery of oil or gas thereon; but if such claim was, on February 25, 1920, in all other respects valid and regular, discovery may be made thereon at any time within two years from and after the passage of this act, and in such event patent therefor, not exceeding one hundred and sixty acres in any one claim, shall issue to the locator or locators, his or their heirs, successors, or assigns, as in other cases, provided, however, that such lands were not, at the date of the location thereof, withdrawn from mineral entry.

ANNUAL ASSESSMENT

S. 2214. Introduced by MR. JONES, of New Mexico, referred to the committee on Mines and Mining. The bill changes the time of the doing of annual assessment work on mining claims from the calendar to the fiscal year. It includes both the United States and Alaska and is similar to other bills which have been introduced for this purpose.

MISCELLANEOUS

S. 1853. Introduced by MR. BURSUM; referred to the Committee on Irrigation and Reclamation. This bill was reviewed in our July issue. Since that time, it has been reported from Committee and amended as follows:

"To provide for a compact commission between the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming and between said States and the United States respecting the disposition and utilization of the waters of the Colorado River for irrigation and other uses, and for other purposes.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that a joint commission, to be composed of representatives of the states of Arizona, Califorina, Colorado, Nevada, New Mexico, Utah and Wyoming and of one representative of the United States of America, to be appointed by the President of the United States, is hereby authorized and constituted, for the purpose of negotiating and entering into an agreement, compact, or agreement between the said states and the United States respecting the further utilization and the disposition of the waters of the Colorado River and streams tributary thereto, and fixing and determining the rights of said States and of the United States in and to the use, benefit and disposition of the waters of said streams: Provided, That any arrangement, compact or agreement so entered into by representatives of said states and of the United States shall not be binding or obligatory upon any of the parties thereto unless and until the same shall have been ratified and approved by the legislature of each of said states and by the Congress of the United States."

S. 1915. Introduced by MR. NORRIS; referred to the Committee on Agriculture and Forestry from which committee it has been reported by Mr. Norris with amendments. This bill creates the Farmers' Export Financing Corporation Act of 1921. The bill appropriates $100,000,000 for the carrying out of the purposes of the act.

H. R. 7865. Introduced by MR. HUDDLESTON; referred to the Committee on Interstate and Foreign Commerce. (*Regulation for prevention of unfair prices.*) The bill provides that whenever it shall find that the price of any product, commodity, or article sold or intended for sale or transportation or introduction into any state, territory or the District of Columbia from any other state, territory, or the District of Columbia, is not regulated solely by full, free, and fair competition, the Federal Trade Commission shall fix a reasonable maximum price at which same may be sold or resold at wholesale and at retail. Section 2 makes the provision that it shall be unlawful for any person, firm, corporation, or association to sell the said product, article, or commodity upon which a maximum price has been fixed by the Federal Trade Commission for more than such maximum price, and the penalty for violating this act shall be a fine of not more than $10,000 and imprisonment for not more than five years.

INDUSTRIAL NOTES

THE Morse Chain Company, Ithaca, New York, has taken exhibit space at the Second National Exposition of Chemical Industries in New York City during the week of September 12. They will exhibit the Morse Rocker Joint Silent Chain Drive. F. G. Anderson, the New York Manager of Sales, will be in charge of the exhibit.

The Jeffrey Manufacturing Company of Columbus, Ohio, has just completed its latest Catalog, No. 350, on Jeffrey Material Handling Machinery. This book contains illustrations, price lists and dimensions of Jeffrey chains, sprockets, conveyor and elevator details, transmission and gears; illustrations and descriptions of their standard line of elevating and conveying machinery for every industry; complete coal handling equipments for boiler house and tipples; mining machinery such as coal cutters, drills, locomotives, pit car loaders and ventilating fans; crushers; pulverizers; shredders; portable loaders, etc.

The Automatic Reclosing Circuit Breaker Company of Columbus, Ohio, wishes to announce the opening of an office in Charleston, West Virginia, at 110 Hale Street, with Donald J. Baker in charge.

Vance McCarty, prominent in the leather belting industry, has been elected vice president of the Chicago Belting Company. He has resigned his position as vice president of the Edward R. Ladew Company, a subsidiary of the Graton & Knight Company. Mr. McCarty will make his headquarters at the New York Branch of the Chicago Belting Company, 127 Water Street, New York City.

LABOR DIFFICULTIES — Sixteen strikes were before the Bureau of Conciliation of the Department of Labor on July 23. In addition the bureau was considering 22 controversies which had not reached the strike stage. Of the total number of cases pending 8 were new as compared with 7 and 3 during the first and second weeks of the month. Of the 8 new cases one involves molders, 4 involve building trades, one printers, one beverage workers and one brickyard workers.

COAL CLEANING REPORT.—The Bureau of Mines has issued a report showing the results of laboratory scale tests of the efficiency of the Trent process in cleaning coal. It says a noteworthy feature of its operation is the cleanness of its separation of mineral from combustible matter. High ash reduction has been obtained with bituminous and anthracite and combustible recovery has averaged better than 95 percent. Sulphur reduction has been good in the case of anthracite but poor with bituminous.

MINE OUTPUT VALUED AT NEARLY SEVEN BILLION DOLLARS

MINERAL PRODUCTION of the United States last year showed an increase of 45 percent in value over that of 1919. Nearly seven billion dollars was added to the nation's wealth by the mines of the country, and this was more than two billion dollars in excess of their contribution during the previous year.

The Geological Survey has prepared the following table, summarizing mineral production of the United States during the last forty years:

Total value of mineral products of the United States from 1880 to 1920

Year	Metallic		Nonmetallic		Unspecified (metallic and nonmetallic)	Total	
	Value	Percentage of increase or decrease	Value	Percentage of increase or decrease		Value	Percentage of increase or decrease
1880	187,881,000	.....	173,582,000	....	6,000,000	367,463,000	.
1881	189,413,000	+ 0.8	207,207,000	+19	6,500,000	403,120,000	+10
1882	215,820,000	+14	230,786,000	+11	6,500,000	453,106,000	+12
1883	197,881,000	− 8	243,680,000	+ 6	6,500,000	448,061,000	− 1
1884	180,284,000	− 9	221,756,000	− 9	5,000,000	407,040,000	− 9
1885	172,218,000	− 4	242,333,000	+ 9	5,000,000	419,551,000	+ 3
1886	204,400,000	+19	250,995,000	+ 4	790,000	456,185,000	+ 9
1887	240,791,000	+18	294,057,000	+17	785,000	535,633,000	+17
1888	242,010,000	+ .5	310,889,000	+ 6	900,000	553,799,000	+ 3
1889	250,325,000	+ 3	291,004,000	− 6	997,000	542,326,000	− 2
1890	303,440,000	+21	310,995,000	+ 7	994,000	615,429,000	+13
1891	280,485,000	− 8	319,364,000	+ 3	1,000,000	600,849,000	− 2
1892	283,715,000	+ 1	337,517,000	+ 6	1,000,000	622,232,000	+ 4
1893	223,154,000	−21	321,339,000	− 5	1,000,000	545,493,000	−12
1894	186,835,000	−16	362,410,000	+13	1,000,000	550,245,000	+ .9
1895	248,033,000	+33	393,658,000	+ 9	1,000,000	642,691,000	+17
1896	252,075,000	+ 2	387,966,000	− 1	1,000,000	641,041,000	− .3
1897	269,934,000	+ 7	380,678,000	− 2	1,000,000	651,612,000	+ 2
1898	308,247,000	+15	417,795,000	+10	1,000,000	727,042,000	+12
1899	483,521,000	+57	525,575,000	+26	1,000,000	1,010,096,000	+39
1900	513,732,000	+ 6	594,204,000	+13	1,000,000	1,108,936,000	+10
1901	493,314,000	− 4	660,764,000	+11	1,000,000	1,155,078,000	+ 4
1902	604,517,000	+23	722,434,000	+ 9	1,000,000	1,327,951,000	+15
1903	588,753,000	− 3	905,628,000	+25	1,000,000	1,495,381,000	+13
1904	501,114,000	−15	857,667,000	− 5	400,000	1,359,181,000	− 9
1905	702,585,000	+40	920,780,000	+ 7	400,000	1,623,765,000	+19
1906	886,180,000	+26	1,014,500,000	+10	200,000	1,900,880,000	+17
1907	904,108,000	+ 2	1,165,376,000	+15	86,000	2,069,570,000	+ 9
1908	550,768,000	−39	1,040,761,000	−11	244,000	1,591,773,000	−23
1909	754,944,000	+37	1,131,866,000	+ 9	297,000	1,887,107,000	+19
1910	749,879,000	− .7	1,237,668,000	+ 9	297,000	1,987,844,000	+ 5
1911	680,907,000	− 9	1,242,942,000	+ .4	232,000	1,924,081,000	− 3
1912	862,008,000	+27	1,375,420,000	+11	366,000	2,237,794,000	+16
1913	878,869,000	+ 2	1,554,298,000	+13	378,000	2,433,545,000	+ 9
1914	686,639,000	−22	1,424,063,000	− 8	470,000	2,111,172,000	−13
1915	991,730,000	+44	1,400,484,000	− 2	2,430,000	2,394,644,000	+13
1916	1,620,745,000	+63	1,884,413,000	+35	3,281,000	3,508,439,000	+47
1917	2,086,234,000	+29	2,900,462,000	+54	5,800,000	4,992,496,000	+42
1918	2,153,318,000	+ 3	3,380,478,000	+17	6,700,000	5,540,496,000	+11
1919	1,351,600,000	−37	3,257,900,000	− 4	3,500,000	4,613,000,000	−17
1920	1,724,300,000	+28	4,977,500,000	+53	5,200,000	6,707,000,000	+45
Grand total	25,206,706,000	.	39,873,194,000	...	83,247,000	65,163,147,000	...

PUBLIC LAND ACTIVITIES

MORE than 3,500,000 acres were classified under the stock-raising homestead law and designated for entry in tracts of 640 acres or less by the Interior Department during the month of June. Much of the acreage classified, however, is included in original entries or in applications which confer a preference right. Relatively little of it is public land free from claims. The areas classified during the month, by states, are as follows: California, 36,035 acres; Montana, 3,344,852 acres; Wyoming, 184,050 acres; total, 3,564,937 acres.

An area of over 200,000 acres in Colorado previously classified as coal land was restored to entry, and about 100,000 acres in New Mexico were classified as noncoal.

During June the Geological Survey reported upon the structural relations of 1,066 applications for prospecting permits under the oil sections of the leasing act of February 25, 1920, thus bringing the number of such reports rendered since July 1, 1920, to 6,994. Reports have been rendered on 249 applications for coal prospecting permits since the passage of the act and 64 were awaiting action at the end of the month. Seventy-eight reports have been rendered on applications for coal leases.

MEXICAN MINING SITUATION SHOWS IMPROVEMENT

IMPROVEMENTS in Mexican mining conditions are noted in reports reaching the Commerce Department. The large Tecolotes Unit at Santa Barbara has resumed operations after several months of idleness. An American company purchased the Inglaterra mine, on which it held an option, having discovered a large quantity of paying ore. Operations have been resumed in unwatering and examining the important Tajo group of mines in the City of Parrall. The Compania Minera de Concho, S. A., was expected to begin operations on rich silver properties which have not been worked seriously since 1914, it being stated that heavy purchases of equipment will be necessary to return the mines to working order.

GEOLOGICAL SURVEY NOTES

C. P. ROSS, who has been assisting J. D. Sears, has been ordered to report to the Oregon Bureau of Mines and Geology to take charge of the mapping of the regional geology of a large part of the Wallowa Mountains.—R. C. Moore and party have completed outfitting and started field work in southern Utah. Their address is Escalante, Utah.—L. F. Yih, rodman, member of the Geological Survey of China, is on the way to Craig, Colo., to join J. D. Sears, who is mapping the geology of a part of Moffat County, with particular reference to oil.—Sidney Paige left July 12 on an inspection tour of geologic field parties. He went first to New England.—A. C. Trowbridge, L. W. Stephenson, and E. W. Berry left July 9, for the Rio Grande region, Tex., to resume field work.—L. A. Faustino, of the Philippine Bureau of Science, was ordered to report July 6 at Bakerstown, Pa., to join Messrs. Richardson and Kimball, for work in the New Kensington quadrangle with reference to coal, oil, and gas.—F. H. Moffit reached Snug Harbor, Alaska, July 2 and began his field work in the Iniskin Bay oil field.—S. R. Capps reached Portage Bay, Alaska, July 2 and began his field work in the Cold Bay oil field. G. C. Martin arrived at Fort Gibbon, Alaska, July 8 and started field work along Yukon River.

Agents of the Geological Survey have resumed oil and gas work in the New Kensington Quadrangle, Pa. Headquarters have been established at Hardin, Mont., for the study of oil geology of the Crow reservations.

Mining and Petroleum Digest

OPTIMISM RETURNING TO UTAH

FORGET YOUR GROUCH. Smile. Loosen up. This is the cheery advice which is being given to all comers by the editor of the *Western Minerol Survey*, Salt Lake City. Furthermore, the writer asserts his belief that things in general are decidedly better than they were just a short time ago, and that mining especially is picking up and is about ready to take a long leap forward. He proceeds:

"Genuine improvement in the mining situation of Utah in the past three brief weeks is plainly observable.

"The spirit of better times is distinctly felt in every large camp of the state.

"This points to the fact, and a vastly important fact at that, that bottom has at last been reached, and the consequent upward movement has already begun.

"This moving back to normal may be exasperatingly slow for a time, but even a little but steady betterment will be deeply appreciated by the masses in this period of naturally dull post-war times.

"A cheery, hearty welcome to better times by all will help more than almost any other factor in hastening its advent. Forget your grouch; smile.

"Mining is Utah's chief pillar. When it is in the dumps the entire financial structure suffers.

"Now that mining is just beginning to show signs of permanent revival, all lines of business may be expected to move upward in concert with the great metal industry.

"Ultra conservativeness of the banks right now is the main factor in preventing a speedy return of prosperity, according to many. This unnatural tightness of money with its radiation of unwholesome timidity and fear forms a brake on business in general.

"The country never before held so much gold, and it has silver in adequate supply for all domestic needs. Then why all this tightening of the screws on an otherwise remarkably prosperous country?

"This nation was never more prosperous than it is today. The people are healthy; the farms are potentially above par, and the mines today are in condition to surpass all past records if stimulated by even a fair market for their products.

"What is wanting right now more than anything else is just a little more reasonable optimism and consequent loosening up by the men who have their grasp on the media of exchange of the country."

NON-UNION WORKMAN SUES A LABOR ORGANIZATION

A NEW LINE OF ATTACK has been developed against the unions. A railroad man with whom members of an organization refused to work has sued the organization for damages. The *Manufacturer's Record* comments upon the unusual proceeding as follows:

"An Associated Press dispatch from Chattanooga, Tenn., says that William Felton has sued the Brotherhood of Railway Trainmen for $5,000 damages alleging that he was discharged from his position on the Southern Railway because his fellow workmen, members of the union, threatened to strike, refusing to work with him if he continued to be employed. He further said that he was with the company for six years and earned $6.48 a day and he charges conspiracy on the part of the union men.

"It will be exceedingly interesting to observe the outcome of this action as it will reveal whether there is any remedy to be had at law for such a discharge and also whether an incorporated labor organization can be sued for pecuniary damages because of its course in such a case. Should the suit be admitted and damages allowed it will be of further interest to note the number of other suits that might follow, instituted by others injured through like combinations of individuals to influence discharges because of the desire to impose union labor control upon all employes."

LAKE SUPERIOR COPPER GOSSIP

EQUALIZATION valuations of Lake Superior copper mines, which are based on the market values of the respective shares, show an average reduction this year of 30 percent, according to a Houghton, Mich., item carried in the *Wall Street Journal*. Hitherto values have been determined in October, but under a new Michigan law they will hereafter be fixed in June. We read:

"Equalization valuations of Lake Superior copper mines, which are based on the market values of the respective shares, show an average reduction this year of 30 percent. The equalization values have been determined in other years in October, but under a new Michigan law will be fixed in June hereafter.

"The total equalized valuation for Houghton county, the greater part of which is in mining property, is $64,081,653, as compared with $91,878,050 last year. Calumet township, in which the Calumet & Hecla mine is located, shows a reduction of nearly $10,000,000; Adams township, which includes the Copper Range mines, is reduced $7,500,000; Quincy, $1,000,000; Franklin, $1,000,000; Osceola, $2,000,000; and Portage, in which is located Isle Royale, $2,000,000.

"Keweenaw county's equalization values have been fixed at $16,000,000, which compared with $21,000,000 last year. The greatest reduction was made in Allouez township in which the Ahmeek and Mohawk mines are located.

"The tax rates will not be set until fall. They will be higher than last year, but the mining companies still will benefit as a result of reduced property valuations. With the exception of a few small orders for domestic delivery, there is little inquiry for metal.

"While there is no change in the mining situation and no immediate prospect of reopening the mines now idle, many men are being given employment in road work, the highway program in both Houghton and Keweenaw counties having been greatly enlarged to tide over the unemployment crisis."

GROWTH OF COPPER COMPANIES

NINE LEADING PRODUCERS of copper made record progress during the last six years. They were the Anaconda, Chino, Inspiration, Kennecott, Miami, Nevada, Consolidated, Phelps Dodge, Ray Consolidated and Utah. Their condition is summarized by the *Wall Street Journal:*

"Progress of nine important copper companies for the six years from 1914 to 1921 is shown herewith in respect to working capital, changes in capital liabilities, cash and investment securities held, inventories, earnings and added value per share.

"These companies showed a combined working capital of $162,573,342 as of December 31, 1920, an increase of $125,567,065 over December 31, 1914. Cash and investment securities totaled $41,872,967 at the close of last year.

"Inventories on December 31, 1920, were $143,112,237, compared with $58,786,349 at the close of 1914, an increase of $84,325,888. This big expansion was due, of course, to the fact that at the end of last year all these companies were carrying very large stocks of unsold metal.

"These companies rolled up their big profits in 1915, 1916, 1917 and 1918. With the ending of the war demand fell away. Coming into 1919 most of the big companies faced little buying power, falling prices and the prospect of carrying big stocks for a long period. Few of them earned their dividends in 1919 and 1920 and they were compelled to dip into surplus to make up the deficiency. After charges and dividends all but Chino showed a deficit in 1920. In the six-year period all these companies added to the value of their shares, despite large dividend payments during the war. Anaconda was the leader in this respect, adding the value of more than half the present selling price of the shares.

"Everything considered, these companies are in a good position to respond to any change for the better in the copper industry. They have passed through a trying period. Some of them are not very strong in cash, it is true, but now that production has been greatly curtailed inventories are being gradually worked off. This will swell cash account. Inventories should show a big contraction at the close of 1921."

This does not mean, however, that copper companies are prosperous today. As the same publication shows in another issue:

"Out of about fifty leading copper companies, eight are producing. The rest have closed mines and smelters, discharged all employes except those necessary to care for and guard property, and are waiting the time when demand again shall have brought surplus stocks down to normal.

"Although surplus stocks of smelter copper have been drawn down, refined metal is still in top-heavy supply. Sales in the past three or four months have in no sense measured up to production, and since the first of July even small demand for domestic and export account has disappeared. But although mines and smelters are closed down, wages of those remaining on the payroll have not been reduced in proportion."

PITY THE POOR COAL MINER!

QUITE BEYOND POPULAR BELIEF is the amount of income of some of the workmen in coal mines, according to an investigation made by the *Boston News Bureau*. Hearing that some of the miners made as much as $15 a day, this newspaper began to search for confirmatory data. It sought its information from a soft coal district in which non-union workmen were employed. The data relates to wages paid today, not to the inflated earnings of the wartime period. At the particular company which was investigated, each man works twenty-six days a month; the company maintains a general store where living essentials can be purchased below general store prices; it also rents living quarters at from $5 to $10 a month; provides coal at $1.50 per ton, a physician at a flat rate of $1.50 per month, and hospital service at 50 cents per month—all of which are deducted from the gross earnings of the workman. These figures, together with the income of workmen, are shown in the table printed below.

The figures of earnings shown below are manifestly selected and do not represent the average, but nevertheless they are actual returns. They illustrate the possibilities of financial return for maximum effort. The total debits column includes charges mentioned above and a living account at the company's store, and the balance-due-miner column shows the amount of income of workmen after all of their monthly necessary expenses have been paid:

Occupation	Gross earnings	Total debits	Balance due miner
Driller	572.30	75.50	496.80
Driller	487.47	79.50	407.97
Driller	567.20	101.75	465.45
Shooter	478.12	77.75	400.37
Shooter	561.37	164.15	397.22
Shooter	399.07	5.50	393.57
Machine man	415.14	27.00	388.14
Machine man	435.36	74.00	361.36
Machine man	465.78	56.75	409.03
Loader	316.86	30.50	286.36
Loader	426.48	29.40	397.08
Loader	424.84	34.00	390.84

"It will be noted that the picked underground men enumerated above are making all the way from $12 to above $20 a day and that the balance after all living expenses runs from $3,500 to $6,000 a year.

"Coal mining is not the most agreeable sort of occupation, but after all it has its compensations!"

U. S. COAL INFLUENCE IN WORLD'S COMMERCE

ALMOST INCONCEIVABLE is the part which coal is playing in the business affairs of the world, according to closest observers. The southern part of the United States contains a coal area twice as great as that of all of Europe. The struggle between the European nations for control of the continental fields calls for an analysis of the situation by the *Manufacturer's Record*:

"Coal as the foundation of the industrial development of the world during the last century becomes more and more vitally important in the struggle for world commerce with the expansion of the world's shipping and industrial activities. Though oil is at the moment commanding the world's attention and a great struggle is on between Great Britain and the United States and other countries for a dominating hold on the world's oil fields, the power of the coal industry is not materially lessened thereby.

"Great Britain faces the inevitable loss of its domination in industry and commerce unless it can save itself through the substitution of oil as fuel in place of coal. Some English coal operators years ago foresaw the inevitable and sought to gain control of large coal properties in this country in order to distribute American coal to their coaling stations throughout the world.

"The tremendous power of the United States in the world's industrial activities can be realized from the simple statement that we have more than one-half of the known coal reserves of the world; that West Virginia and Kentucky have each about twice as much coal area as Great Britain; that Alabama has about as much coal area as Great Britain and besides coal has its vast supply of iron ores almost within rifle shot of the coal. All of Europe, outside of Russia, has about 17,000 square miles of coal lands. The South has 85,000 square miles. Russia is estimated to have 25,000 square miles, so all of Europe including Russia, with an aggregate of 42,000 square miles of coal, has less than one-half of the coal area of the South alone. The United States has ten times as much coal area as all of Europe. The influence which this tremendous coal reserve will have upon world affairs is almost inconceivably great.

"England is beginning to realize the meaning of this fact. France and Germany have realized it to the fullest for many years."

KANSAS LABOR COURT DECISION

TWO DEFINITE RESULTS from the operations of the Kansas industrial relations court may now be pointed out, and in the opinion of JUDGE CLYDE M. REED, writing in *Editor and Publisher* (New York), both of them are good. We read:

"On arriving at the age of sixteen months the Kansas law creating the Court of Industrial Relations, as an institution for the amelioration of industrial strife, is able to cut two important recent notches on the handle of its gun which could properly be described as—

"First, a unanimous decision of the Kansas Supreme Court in the case of the appeal of Alexander Howat, president of District 14 of the United Mine Workers of America, which was a sweeping upholding the Industrial Court Law. (Handed June down 11, 1921.)

"Second, the report of the state mine inspector which discloses that the production of coal in Kansas in 1920, being the first year of the operation of the Industrial Court Law, showed an increase of approximately 12½ percent over 1919 and an increase of the average working days of the mines of 60.7 days in 1920 over 1919.

"These two outstanding facts have replaced hope with belief and faith with the fact of assured performance in the hearts and minds of Gov. Henry J. Allen and the men in Kansas who have worked with him in writing into the laws of Kansas a plan whereby industry and the interest of the public may be protected against industrial warfare without taking away from either of the combatants any right essential to their well-being."

WATER POWER APPLICATIONS FROM 33 STATES

UP TO JUNE 30, applications aggregating 14,675 horse-power and affecting 33 states and the District of Columbia and Alaska had been filed with the Federal Power Commission. This amount is 75 per cent greater than the entire water power development of the United States today, 50 percent greater than the combined water resources of Norway and Sweden, and 5 times greater than the aggregate of all applications filed with the federal government in the preceding 15 years.

The first license was issued on March 1 to the Niagara Falls Power Company. Between that date and July 1, final action has been taken on 47 applications, 13 preliminary permits have been issued, involving 1,075,000 horse-power, and 15 licenses, involving 757,000 primary horse-power and 460,000 secondary horse-power, or a total of 1,217,000 horse-power, making an aggregate of 28 projects, involving 2,292,000 horse-power, or as much as was issued by all of the Executive Departments during the 10 years preceding the passage of the Federal Water Power Act.

The commission reports that only 60 percent of the applications filed have been accompanied by sufficient information to warrant more than preliminary action.

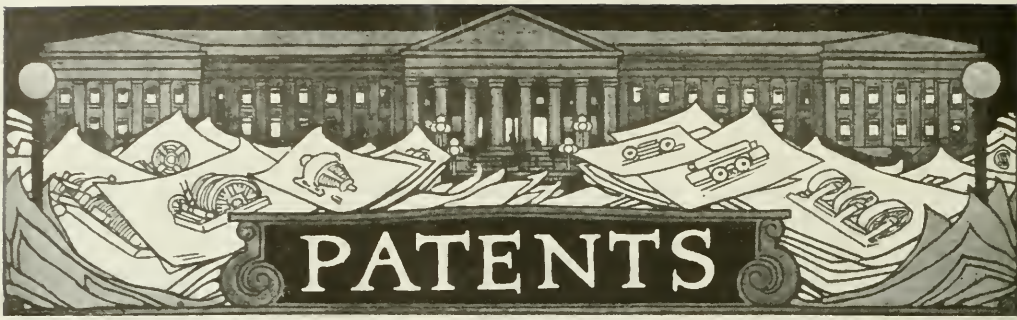
POTTERY BUSINESS GROWS

PROSPERITY AND POTTERY were synonymous terms in 1920. Production, exports, imports and prices were all larger than ever before. The dearth of supply caused by the war was responsible, and notwithstanding imports some of the domestic plants have enough orders booked to keep them busy during the current year.

The value of the American production for the year is estimated at $105,700,000, or 39 percent more than that of 1919 and 65 percent above 1918. The value of the annual market showed an increase of 213 percent over 1910 and 434 percent over 1900, and every kind of domestic pottery article shared in the year's advance except red and brown white-lined cooking ware and chemical porcelain, which combined amounted to less than one percent of the total production.

Whiteware production for the year was valued at $39,360,000, showing an increase of $9,660,000; sanitary ware at $21,480,000, an increase of $7,000,000; porcelain electrical supplies at $18,560,000, an increase of $6,370,000; china at $11,060,000; an increase of $3,435,000; stoneware at $6,025,000, an increase of $1,595,000.

Imports for American consumption during the year aggregated $10,850,772, or 50 percent over those of the year preceding General ware constituted ninety-six percent of the value of imports. Every variety of imported pottery showed an increase value except tobacco smoking pipes and undecorated earthenware and crockery.



Conducted by John Boyle, Jr.

PATENT OFFICE BUSINESS GROWS

THE LAST SIX MONTHS have been the busiest in the history of the Patent Office.

Receipts for applications for patents amounted to 45,005, as compared with 42,607, 37,143 and 31,568 for the first six months of the years 1920, 1919 and 1918. Receipts of applications for trade-marks totaled 8,369 in this time, as compared with 7,940, 5,447 and 3,730 for the corresponding periods of 1920, 1919 and 1918. The gain in applications for patent received in the half yearly period just closed over the first six months of 1918 was 42½ percent, while the gain in trade-mark applications amounted to 124 percent.

Despite the industrial depression the amount of business presented to the Patent Office in every branch has constantly increased since the year 1918, and in leaps and bounds. The demands upon the Patent Office are beyond any previous figures in its history with no recession in sight, and are far in excess of the capacity of its limited and practically stationary force to handle properly.

1,377,937—*C. Spearman*, West Mount, Quebec, Canada, May 10, 1921.

Flotation Process which consists in grinding the ore with an aqueous solution containing a small percentage of oil and agitating the material to separate the desired values from the gangue and permit particles of the values to coalesce and float on the surface of the solution, and then destroying the adhesion of the coalesced particles and screening the values to separate the larger flakes from the powdered particles.

1,378,358—*N. D. Levin*, Columbus, Ohio, May 17, 1921, assigned to Jeffrey Mfg. Co.

Mining Machine Truck particularly trucks of the sort that are used in mines for transporting machines from one room to another, where mining operations are being carried on. These mining machines, as is now well known in some cases, are exceedingly heavy and cumbersome, and they must be manipulated in restricted rooms which are of only a few feet in vertical dimensions, and in entries or passageways which are not only similarly low, but are restricted in horizontal dimensions. The machines must be used at a relatively low level, lower than the supporting floors or platforms of the trucks on which they are transported. The object of the invention is to provide a truck which will support a heavy mechanism in a relatively elevated horizontal plane for purposes of transportation, and which shall have its parts so constructed and arranged that the machine can be unloaded by power and let down to a lower working level; and then elevated to the higher position on the truck.

1,378,359—*N. D. Levin*, Columbus, Ohio, May 17, 1921, assigned to Jeffrey Mfg. Co.

Mining Apparatus of the class which comprises a cutting mechanism which is bodily movable transversely across the front of a room while cutting and a wheeled truck for carrying the mechanism from one place of use to another. According to usual earlier practice it has been necessary to unload the cutting mechanism from the truck and then to move it into cutting position by means of bars, cables, etc.; and then, after the completion of the cutting operation, it has been necessary to again move the machine by means of bars, cables, etc., back to the position from which it can be reloaded. According to the present invention, the truck is so constructed that the mining machine can be unloaded therefrom into any desired cutting position or reloaded thereonto from any desired cutting position without any intermediate movements being necessary.

1,378,360—*N. D. Levin*, Columbus, Ohio, May 17, 1921, assigned to Jeffrey Mfg. Co.

Mining and Loading Machine having the following improved features among others: improved rope controlled mechanism for moving the cutter device bodily with respect to the bed frame; improved shear cutting mechanisms adapted to cut kerfs having vertical forward edges; improved breaking down devices and improved actuating and controlling mechanism therefor; means supplemental to the main conveyer for gathering and loading the slack from the under-cutting means; means independent of the main power devices for driving the rear swinging conveyer; improved rope controlled means for moving the machine as a whole from one position to another; improved power transmitting devices for driving the various operative parts; improved devices whereby the various parts of the machine may be readily controlled by the operators.

1,378,361—*N. D. Levin*, Columbus, Ohio, May 17, 1921, assigned to Jeffrey Mfg. Co.

Mining and Loading Mechanism. One of the characteristic features of difference between this machine and earlier machines is that it is free for movement either inward or along the coal face, and is provided with means for cutting a kerf during movements in either of the said directions. The machine is actuated, guided and controlled entirely be means of flexible cables which permit it to be moved as desired under the control of the operator to conform to the varying conditions of the coal to be mined and loaded. One object of the invention, therefore, is to provide a continuously operating mining and loading machine which can be moved while operating either inwardly to make a sumping cut or parallel to the coal face, preferably in either direction. Another object is to provide, in combination with the cutting, breaking down and loading devices, improved actuating, guiding and controlling elements. A further object is to provide an improved general arrangement of parts for a machine of this character. A still further object is to provide a combined mechanism comprising improved conveying devices supplemental to the primary conveyer which initially receives the broken down coal.

1,378,699—*R. L. Lloyd*, New York, N. Y., May 17, 1921, assigned to Dwight & Lloyd Metallurgical Co., New York.

Method of Treating Ores containing zinc or a negligible quantity of sulphur, the same consisting of mixing therewith a reducing agent, subjecting the commingled material to a temperature lower than that at which zinc reduces and volatilizes, then subjecting the mass to the action of a solvent and dissolving therefrom the zinc component.

1,377,132, 1,378,809, assigned to Jeffrey Mfg. Co.; 1,378,810, 1,378,811, 1,378,812, 1,378,813, 1,378,814, 1,378,815, 1,378,816, 1,378,817, 1,378,818, 1,378,819, assigned to Sullivan Machinery Co., *Morris P. Holmes*, Claremont, N. H.

Mining Machine Trucks in which there is a counter balanced, tilting solid frame truck which remains in a tilted position after the unloading of the mining machine, but which will automatically return to a horizontal position when the machine is loaded on to the truck.

1,378,830—*N. D. Levin*, Columbus, Ohio, May 17, 1921, assigned to Jeffrey Mfg. Co.

Apparatus for Mining Coal. An apparatus for mining coal comprising a horizontally extending kerf cutter adapted to be moved either longitudinally or laterally to form a kerf at the base of a coal vein, means for breaking down the coal above said kerf, a conveyer in fixed relation with said kerf cutter adapted to receive and remove said coal as it is broken down, and an auxiliary conveyer extending longitudinally of the coal face adjustable relative thereto, and adapted to receive the broken coal from said receiving conveyer.

The

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THE ANNUAL CONVENTION OF THE MINING INDUSTRY

TWENTY-ONE THOUSAND ENTERPRISES whose output of raw materials last year added seven billion dollars to the nation's wealth will be represented at the annual convention of the American Mining Congress, which will be held in Chicago, October 17-22. Questions of importance not only to mine owners and makers of mining machinery and supplies, but to every business, every consumer in the United States, will be discussed, and among those participating in the deliberations will be some of the greatest statesmen, economists and educators, the largest shippers and the leading manufacturers of the United States.

Besides the general convention sessions, there will be held conferences where groups of delegates will concentrate upon particular problems. Included among them will be

(1) National Standardization Conference.
(2) National Oil Shale Conference.
(3) Conference on Public Education and Service.

At the Standardization Conference in Denver last year the attendance was approximately five hundred. The constructive program agreed upon at that time has produced results during the intervening period. The wisdom of standardization has been demonstrated, and the interest taken therein by operators and manufacturers would seem to warrant the prediction of enlarged attendance this year. Speakers of national import will address this meeting, all acknowledged leaders in the quest for method, equipment and welfare standards.

Every man at all interested in lubrication and power—and that includes every mine owner and every manufacturer—is directly concerned in the National Oil Shale Conference. Here a great industry in the making will be discussed, and by the men who are going to make it. President Victor C. Alderson of the Colorado School of Mines will conduct this conference, which will be participated in by experts from Colorado, Utah, California and other states where shale resources abound. Undoubtedly a mighty impetus will be given the movement for converting these resources into useful commodities of commerce.

Both the Standardization and the Oil Shale conferences will be held in the Coliseum, where delegates may inspect the machinery which has been designed to aid in the solution of their problems.

Closer co-operation between the United States Government and state geological surveys and mining schools is the object of the conference on Public Education and Service, which will be conducted by Dr. Charles H. Fulton, Director of the Missouri School of Mines. This will be the first conference of such nature held at any Mining Congress convention, and its objects are so intimately interwoven in the future of the mining industry that it will doubtlessly become a feature of the annual meetings and a permanent part of the national work.

The list of speakers representing the coal industry gives promise of a symposium of views of a calibre sufficient to make any purely coal conference notable. Such men as Thomas T. Brewster, C. E. Lesher, J. D. A. Morrow and F. C. Bradley will deliver addresses. They always have something important to say, and they know how to say it.

Senator Samuel D. Nicholson will deliver an address. Every branch of the industry will avail itself of the opportunity to learn the views of this Western statesman who believes mining is of sufficient importance to warrant the creation of a new executive department of government, the Department of Mines, to be presided over by a Secretary of Mining, a member of the Cabinet.

Gold, silver, copper, zinc, taxation, tariff and other subjects and problems upon the handling of which depends the future prosperity of the mining industry will be given their proper places on the program. The full list of subjects and speakers is too lengthy for inclusion in this article. No operator, no manufacturer of mining machinery and supplies, can afford to stay away from Chicago during the week of October 17-22, and judging by advance indications very few of them will.

TAX REVISION LEGISLATION

CONFRONTED with the problem of reducing the enormous tax burden under which the country has been staggering, at the same time providing for revenue sufficient to adequately finance the government, the administration has adopted a program of revenue legislation which, although it does not meet with unanimous approval, is probably the best measure of relief that can be expected under present conditions.

The policy of strict economy in government expenditures certainly is to be commended, and the effort of Congress to reduce taxes, as evidenced by the revenue bill which passed the House, is sincere. It must be conceded that the repeal of the excess profits tax, repeal of surtax rates above thirty-two percent, repeal of transportation taxes, repeal of the taxes on luxuries, beverages, insurance, and proprietary medicines, and increase of the exemptions for heads of families and dependents, as a measure of permanent relief is a long stride in the right direction. There was no attempt made to shift the burden and in the reductions accomplished the wage earner, as well as business and industry, shares equitably in the relief granted.

The measure is now before the Senate, which will violate its traditional policy if it does not make some changes in the bill; but business and industry are now certain of a large measure of relief from the excessive war-time burden and can adjust their plans for retrenchment and recovery accordingly.

The mining industry has not been deprived in the new bill of any rights which are now operative under provisions of existing law, and which were recognized by Congress to be just and equitable because of the hazardous and uncertain nature of mining generally as an investment. Mining corporations will have to pay an increased income tax of twelve and one-half percent, which is two and one-half percent over the present rate; but it is believed by the authors of the legislation that the advantages to be derived from the repeal of the excess profits tax and the simplification of tax returns resulting from the abandonment of invested capital as a basis for computing deductions will more than offset any dissatisfaction which may result from the increased normal rate and will remove a source of inequality and discrimination.

RESULTS OF TRANSCONTINENTAL FREIGHT REDUCTIONS

UTAH OPERATORS WILL BENEFIT materially from the twenty-five percent cut in freight rates on bullion from Salt Lake valley smelters to eastern refineries which became effective August 11. The new schedule does away with the last increase of thirty-three and one-third percent and effects a return to the rates established by the Railroad Administration in June, 1918.

It is expected that the reduction, which amounts to $5.50 a ton on bullion, will be reflected in a reduction of charges by Utah smelters. When the rate of $22 was authorized by the Interstate Commerce Commission in August of last year the valley smelters imposed in consequence thereof an additional deduction from market quotations of one cent an ounce on silver, one-quarter cent a pound on copper and one-quarter cent a pound on lead. These deductions, with increased treatment charges, are estimated to have amounted to more than fifty cents per ton of ore in added costs to producers. Utah's ore production last year, exclusive of that of the Utah Copper Company, amounted to 1,343,000 tons. Theoretically, the savings resulting to Utah operators through the new bullion rates will amount to nearly $675,000 annually. A very tidy sum, indeed.

The American Mining Congress, particularly the Utah and Colorado chapters, has been insistent and unremitting in its efforts to effect these savings, and now contemplates with satisfaction the benefits which will accrue to the industry. The new freight schedule is one of the factors whose operation is necessary to a revival of the mining business.

THE OPPORTUNITY AT CHICAGO

ONE WAY TO GET BUSINESS is to produce something which the other fellow needs and convince him by a visible demonstration that he cannot afford to do without it. This is an old way, but it is still one of the best ways. The mining operators and the manufacturers of mining machinery and equipment have chosen this as one of the methods for expanding their activities, and they are making the world sit up and take notice.

For be it known that the National Exposition of Mines and Mining Equipment to be held in Chicago October 17-22 in connection with the annual convention of the American Mining Congress has already become an international affair. Mexico, whose commercial future is inextricably entwined with that of the United States, has sent an exhibit, and Latin-American countries which offer such wonderful opportunities for export business are sending their most expert trade advisers to observe and take note. The latest developments in mining machinery, the most modern mining equipment, all of which will be exhibited there, will be studied by men capable of recognizing and appreciating their value, and it goes without saying that favorable impressions made upon these shrewd business men will be followed by orders.

Foreign trade is needed by America, even as American trade is needed by other countries. Not since this country cast off her swaddling clothes has the domestic market been able to absorb the entire American output of raw and manufactured commodities, and not until orders begin to arrive in large volume from other lands can our marvelously efficient mines, factories and farms return fully to a quantity production basis and trust to small unit profits for large aggregate returns.

But the exposition is being built primarily for Americans. Great as will be its appeal to the business man of Mexico, South America and Canada, greater still will be its message to the mine operator, the manufacturer and the general public of the United States. Its scope will be extensive and inclusive. Its dominant note will be educational. It will include, for instance, an instructive exhibit arranged by the coal operators which will give an accurate idea of the numerous factors entering into the cost of a ton of coal. This exhibit will amount to a revelation to the general public. A display of the same character has been arranged by the iron ore operators. The territory of Alaska will make an exhibit of all of its resources, including fishing, farming and animal producton as well as mining. Inspection of the Alaskan section alone will be the equivalent in many respects of a tour half way around the world. Some of the Western States will have complete displays of their minerals. The whole vast array of mineral resources will be made complete and understandable by the exhibition of the machinery and equipment which made their development possible. In many respects the show will be of greater educational value than any other exposition held in a generation. It is not surprising that mining operators everywhere are planning to attend and that the press of the country is calling attention of the general public to the unparallelled opportunity for acquiring first-hand information of mining, a basic industry in forty states, and the most interesting, the most romantic industry in the world.

EIGHT HOUR DAY TOO SHORT!

WILL WONDERS NEVER CEASE? Reports from Germany are to the effect that laborers in Wurttemburg have objected to the eight-hour day, not because they believe in a forty-four-hour week, but because they think eight hours out of twenty-four constitute too short a working day. The reports have it that the workingmen have absolutely refused to admit that there are any advantages in the short day, and cases have occurred in which the employes of plants have signed petitions to the government protesting unanimously against the limitation of the hours of industry.

A reaction has set about in England. The president of the Miners' Federation is quoted in the daily press as saying that the great strike was a serious mistake. For years the workers did less and less work and asked more and more pay and British officials encouraged them in this attitude, so that the production of three hundred and twenty tons per man in 1892 had decreased by March of this year to one hundred and seventy-four tons per annum. Now that the strike has been won, the workmen are beginning to realize it was an empty victory. A flooded mine means loss of profits to the owner, but it may mean the deprivation of the means of livelihood for the worker. Lost production is showing its effect in high prices which are felt keenly by those primarily responsible. A state of society depending upon big pay for little work is resting upon an insurance foundation, and when the house of folly comes tumbling down the impact is felt most severely by those who reared the unstable structure.

Will American labor zealots profit from the lessons which come from abroad? Omitting all consideration of the misery which claims the Russian workmen for its own, will they heed the experience of Germany and England? It is fervently to be hoped that they will, although the indications of their doing so are not any too favorable. Railroad employes are resisting efforts toward a return to fair wages and operating conditions. Coal mine workmen have given notice that they will not agree to a downward revision of pay scales next April. On the day before this was written, the president of the American Federation of Labor condemned wage reductions as an "economic crime," and the outlaw mine workmen of West Virginia collected to march under arms into a neighboring county.

But while these instances lend a dark color to the picture, it must not be concluded that the outlook is altogether black. Conditions will right themselves in the long run—the only question is, how long? Stated differently, will labor force a prolonged conflict, or will it co-operate with management and the public and by making mutual concessions restore economic levels in the shortest possible time and to the distinct advantage of all? Those who take the view that this will be labor's course are not without substantial reasons for their attitude.

American labor is the highest paid in the world. Working days are shorter, and work is more continuous the year around and is performed under more healthful conditions than anywhere else. Possessing a better education, and having more time for recreation and reflection, than the workman in any other country, the American workman is manifestly the most intelligent in the world. And every intelligent man knows that prosperity cannot be created by fiat; that no one can eat his cake and still have it; that wage scales cannot be sustained at peak levels while working days become fewer and shorter. Is it too much to hope, that labor will translate this knowledge into action and co-operate with management in bringing about readjustment without unnecessary loss of time?

The rank and file of labor is more reasonable than its leaders, for it undoubtedly has more at stake. It is to be hoped that during the next few months, or years, the judgment of the rank and file will control in labor councils, so that such disastrous conditions as have followed the English strike will not be visited upon this country. Management is anxious to give as well as take, for management also has much at stake. The public can be relied upon to co-operate, for the public embraces both labor and management, is greater than either, and has everything at stake.

THE TAX EXEMPT SECURITIES PROBLEM

UNDER EXISTING LAWS vast amounts of liquid or circulating capital have been withdrawn from the normal channels of industrial and business enterprise and converted into tax-exempt securities issued by authority of the federal, state and municipal governments, and the situation is rapidly becoming one of the most vital problems confronting the nation. Liquid capital is essential to industrial development and trade expansion, and its withdrawal or diversion from the promotion and maintenance of basic industries produces an abnormal and depressing condition which seriously affects every industry and every commercial and labor unit dependent thereon. The volume of productive capital of the nation can be maintained only by constant investment; and a large portion of the gross product or income of industry must be used to replace capital that has disappeared in operations. If this replacement should be postponed for even one year, the productivity of labor would be enormously lessened. Coincident, therefore, with the increase in the volume of outstanding tax-free bonds, the country is experiencing an increase in the numbers of unemployed.

It is contrary to the spirit of government by the people that a class of citizens should be created whose wealth is exempt from taxation, who contribute nothing to the support of the government, whose ability and capital are separated from the vital pursuits of industry and business, and whose security from all duty and responsibility is certain to lead to an indifferent attitude toward the classes upon whom the burden of maintaining industry and government rests, and upon whom the added burden of taxation falls. With every new tax-exempt bond issue, the line of cleavage between the wealthy class, on the one hand, into whose possession these securities are constantly flowing, and the industrial and working classes, on the other, upon whom the tax burden is thereby increased, is becoming more apparent to all who are interested in the national welfare. Existing conditions have a tendency to induce the wealthy in every locality to encourage the issuance of bonds for local and civic improvement, thus increasing the value of their realty and industrial holdings, which can thereafter be sold and the money received reinvested in tax-free bonds.

It will be seen that eventually this class will become entirely divested of taxable personal and realty holdings and will possess no property or have income that is subject to taxation, although they will wield great political influence on account of their position as creditors. The masses, therefore, both labor and capital engaged in industrial enterprise, will occupy the position of debtors, will carry an increased tax burden, not only for the ordinary maintenance of the local and federal governments, but also for the purpose of paying interest and principal on the bond-holdings of the tax-exempt class. The insistent demand for such securities is encouraging public indebtedness beyond ability to pay, and unparalleled extravagance and inefficiency in the expenditure of funds raised in this manner.

It may be contended that capital, diverted from normal channels into new avenues of investment, must eventually reach a point where it will flow back into those normal courses of industry, so that the general industrial depression resulting from that cause alone would be only temporary; but this is extremely problematical. When it is considered that a state or municipality must impose additional taxes upon an already overburdened public for the purpose of paying interest and creating a reserve fund for the ultimate retirement of the bonds, not only is the original draft upon the country's investment pool a potent factor or influence upon industrial retrenchment, but the constant annual drain, which takes vast sums out of the pool for an indefinite period until such retirement, must be reckoned with. The enormous demand upon the reservoir of liquid capital during the past two years as the result of the purchase of tax-free securities is choking industry, and will keep the level of capital for industrial purposes below normal so long as their issuance continues, thus fostering unemployment and industrial unrest. The permanency of employment in industry is thereby made insecure, although temporary employment is created for certain classes by an abnormal demand for road building and civic improvement, and the uncertainty of future occupation at a remunerative or living wage destroys the worker's morale, lessens his efficiency, and tends to demoralize the labor situation generally.

The taxpaying public may well view this growing menace with apprehension, and take immediate steps to secure the enactment of legislative or constitutional measures necessary to prevent its continued growth. If Congress should attempt to bring within the range of income tax state and municipal bonds, there is little doubt as to how the Supreme Court would decide the question of constitutionality, as it has virtually declared by judicial dicta in the case of Evans v. Gore, recently handed down, that Congress does not possess such power, and Chief Justice William Howard Taft, in an article published in 1918 while he was still a private citizen, expressed the same view, which probably is still the opinion he holds concerning the question. Resolutions have been introduced by Congressman Louis T. McFadden, Chairman of the House Banking and Currency Committee, and by Senator Reed Smoot, providing for an amendment to the Constitution which will give Congress the power to remedy the evil, and the immediate enactment of such an amendment seems imperative.

ADVERTISING AND MINING

NO BETTER TEST of progression or proficiency in business can be found than the advertising policy of any large concern in depressing periods such as that from which we now happily are about to emerge. No set of business men in the United States has stood this test, or is still standing it, more creditably than the mining operators and those who cater in a commercial way to their needs.

The firm which is shortsighted and timid, either through unwisdom or inexperience, at the first indication of a slump cuts its advertising appropriation. Thereupon its business inevitably declines whether the slump ever materializes for its competitors or not. The result is to an extent what might be expected if its salesmen were recalled from their routes, its telephones plugged and the sign of the firm scraped off the front.

The wide-awake firm, the substantial firm which refuses to die or be killed, ignores the first sign of depression and answers the second with an increased advertising appropriation. If the majority of all firms prove to be of the wide-awake kind, the threatened slump is either staved off or prevented altogether.

Sometimes a panic is actually forced, as when a sufficient number become affrighted at unsettled conditions and yield to fear and pessimism. At other times a period of depression follows as a matter of course, as when half the world through war or idleness dissipates its resources and thereby loses its purchasing power. But even in such circumstances the modern American business man continues to advertise and resolves every question whether to purchase or not to purchase additional white space in the affirmative. He knows that business will never go completely to the dogs, and that the advertiser who keeps his wares constantly before the public will get the bulk of business during the stringency and have every advantage over non-advertisers when prosperity returns.

During the last disheartening year the mining industry has pursued this policy. There have been recessions in the volume of space used, but in the main the operators and the manufacturers of mining equipment have never ceased to advertise. It is within the knowledge of the Mining Congress Journal that they have held their advertising programs more nearly to a normal basis than have the leading concerns in many other lines.

The Special Convention Issue of the MINING CONGRESS JOURNAL, which will be perused by twice the usual number of readers, will carry an unprecedentedly large volume of advertising. On August 20, forty days before the date of publication, contracts had been closed for a greater amount of display matter than was carried in the 1920 Convention Issue. Many of the firms to be represented in the Special Issue will make their convention message the beginning of an extensive and intensive advertising campaign to run throughout the ensuing twelve months. Returning prosperity will find mining and its allied industries equipped to take full advantage of the opportunities which the year 1922 will assuredly have to offer.

SECRETARY FALL AND OIL SHALE

"EVENTUALLY, WHY NOT NOW?" summarizes Secretary of the Interior Fall's view respecting the development of a definite oil shale program. The Secretary's statement made to a Congressional committee in support of an appropriation for a three-year investigation constituted an unanswerable argument for the adoption of a clear and continuing policy, and that without further delay.

Disagreement obtains as to the life of our known petroleum fields and the probable extent of resources yet to be discovered, but no one disputes the assertion that the demand for petroleum products will continue to become greater and greater and that the known supply must at some time be augmented by new discoveries or the development of substitutes. In the latter event, oil shale offers the most likely recourse. It is conceded that its potentialities are great and that shale products will ultimately become commercial factors of the first importance. Secretary Fall takes the view that the country should be forehanded enough to conduct its preliminary investigations at once and be ready to meet the emergency whenever it may arise and howsoever pressing it may be.

Many problems, both practical and scientific, must be solved. What is the best method of mining shale? What process of distillation will lead to the recovery of the greatest amount of highest grade oil at lowest cost? What are the possibilities for production of by-products, and what will be the market demand for them when they are produced? Will a long and expensive campaign of education be necessary before the public will consent to use shale products? These and many other questions must be answered, and the sooner investigation to that end is completed the sooner will the shale-products industry be established on a commercially profitable basis.

Secretary Fall estimates that three years will be required to secure the preliminary information which must precede the establishment of the oil shale industry upon a sound basis. The cost of carrying out the research program of the Bureau of Mines will be $240,000, or $140,000 for the first year and $50,000 for each of the two years following. It has been estimated that the shale beds of a few western states alone would yield sufficient oil, at the present rate of consumption, to supply the United States for one hundred and twenty-five years. Government assistance to such an end would be economical even at a cost of $240,000,000. Secretary Fall is altogether justified in asking for an appropriation of one percent of this amount.

PITTMAN ACT PURCHASES TO CONTINUE THREE TO SEVEN YEARS

THE PROBABLE LIFE of the Pittman silver purchase act is a subject of deep interest to the miner. Any discussion must take into consideration at the outset the following four points:

1. The Director of the Mint in his report for 1920 states that about 208,000,000 ounces of silver have been sold under the Pittman Act, which, of course, must be replaced.

2. The total amount of silver purchased by the mint up to the close of business July 27th, was 64,240,816 ounces.

3. The mint did not commence the purchase of silver in 1920 until May, when the market price of silver declined below the Pittman price. The total amount of silver purchased during 1920 was 29,907,361 ounces.

4. From the above figures it appears that 144,000,000 ounces have yet to be purchased by the mint.

Silver is being produced in the United States at about the rate of 35,000,000 ounces per year which is half of the normal production. The silver production for 1921 will probably be about 45,000,000 ounces, for the reason that there was a large amount of ore produced in 1920 from which the silver was recovered in 1921, which would artificially increase production for the first six months of this year. The decline in production of by-product silver will probably be more rapid from now on. Assuming that the base metal output of copper and lead remain at their present output for two years, silver production will probably not exceed 35,000,000 ounces per year dating from August 1, 1921. It is not likely that a material increase in the production of copper will take place during that time. It will probably be several years before normal production can be resumed. Some improvement in the third year may be looked for, reflecting in the possible increase in the output up to 45,000,000 ounces of silver. This should make a total anticipated output for the next three years of 115,000,000 ounces. After the third year the production of silver may still further be increased so that the silver purchases under the Pittman Act could be completed within a half year. It would seem therefore, to be a conservative estimate that the Pittman Act purchases will continue for three and a half years on a minimum basis from August 1, 1921.

It is a notable fact in connection with making such an estimate that the production of silver from silicious ores has not so far been stimulated by the Pittman price. There may be a slightly increased output from this source if costs of production decline. Should the production of copper and lead be still further depressed and should the open market price of silver exceed the Pittman Act price, an extention of the time in the purchases under the Pittman Act would result.

From May, 1919, to May, 1920, the open market price of silver exceeded the Pittman price and no purchases were made by the mint during that period. As to the likelihood of the international price exceeding the Pittman Act price there is, in the opinion of close students of the situation, very little likelihood during the next three or fours years. A great deal of silver has been released in the process of lessening the fineness of subsidiary silver coin in England and other countries. A great many subsidiary coins have been put into circulation which do not contain silver. There probably exists a desire on the part of many of the European countries to restore their high-grade subsidiary silver coinage, but the conditions of economic stress under which they are now operating would probably be prohibitory of their replacing their base coin circulation for some time to come.

The industrial consumption of silver, at present depressed in the photographic field, will probably recover in the near future. The consumption of silver in the manufacture of silverware has already shown some decrease and the future prospects of increased consumption depend largely upon the general prosperity of the nation, the time for resumption of which is in doubt. There may be other contingencies with regard to the Oriental consumption of silver which will greatly influence the situation, but these cannot be anticipated with any degree of accuracy. It would, therefore, be safe to estimate the life of the Pittman Act purchases at three and and a half years dating from August 1, 1921, which it is conceivable might be extended not to exceed seven years in the event that the international price should exceed the Pittman Act price, and all other factors were favorable.

THE PRICE OF COAL

THE PUBLIC IS DECEIVING ITSELF if it believes the Congress of the United States by enacting regulatory legislation can lower the price of coal. No governmental agency, national or state, can do that.

Advocates of government regulation make the mistake of holding the operators, or owners of the mines, responsible for high prices, when in reality they are no more responsible than are the consumers themselves. The two chief factors in coal prices are high wages and high freight rates, and no amount of regulation of the mine owners would bring either one of them down.

A few years ago the cost of producing a ton of anthracite was \$2.50. Now the labor cost alone is \$7.08 (government figures). The mine owner sells this coal for \$7.75, leaving a gross margin of 67 cents out of which he must pay selling expenses, taxes, etc., before he can realize a penny of profit. The amount paid to mine labor alone is more than the selling price of coal before the war.

To the \$7.75 received by the mine owner must be added \$3 or more for freight, making the cost to the retailer \$11 per ton at the lowest. The retailer must also make a profit and the laborer who delivers the coal to the cellar must be paid.

Freight from the bituminous fields of Colorado to Denver, formerly amounting to \$1 per ton, now is \$2.90. The lowest paid underground laborer receives \$7.75 for eight hours work. In the bituminous fields of the Southern and Central States labor costs have risen to equally exorbitant figures. The last freight rate increase alone added \$1.04 to the cost of every ton of coal delivered in Washington, D. C. The increase to cities farther removed from the mines was proportionately greater, ranging from twenty-five to forty percent of the retail price.

Freight rates and wages are the controlling factors in coal prices and, as Senator Reed of Missouri said:

> "Until these controlling facts are changed, the country is confronted with the problem of high-priced coal. That problem, I repeat, can only be effectively and permanently solved by a reduction in the cost of production and a reduction in freight rates."

The owners of the mines cannot reduce either freight rates or wages. Freight rates are controlled by the Interstate Commerce Commission, and high wages were fixed by another government commission which prescribed that the scale should continue in effect until April of next year. The public and the Congress may assist in bringing about lower coal prices, not by prescribing burdensome and expensive regulation of the coal-mining industry, but by co-operating with the industry in seeking deflation of wages and freight rates.

ENGINEER STUDENTS GET THE NEWS FROM MINING CONGRESS

AT THE UNIVERSITY OF ILLINOIS, Department of Mining Engineering, the faculty and student body keep abreast of the times by reading the publications of the American Mining Congress. So popular has this custom become that one copy of each publication has become insufficient, and Professor H. H. Stoeck, of the College of Mining Engineering, has sent the Mining Congress the following letter:

> "I will greatly appreciate the courtesy if you can send us an extra copy, or copies, of the MINING CONGRESS JOURNAL, the proceedings of the annual convention and the weekly bulletin for use in our mining library and mining seminar. The single copy of each which we now receive is placed in the general engineering library, which is in another building and not so easily accessible for our students. Moreover, a single copy cannot be advantageously consulted by an entire class of students without a great loss of time.
>
> "We aim, at Illinois, to have our students, and particularly the more advanced ones, keep in touch with current mining news and mining legislation, and I know of no way in which they can do this for the whole mining industry so well as through the publications of the Mining Congress.
>
> "I believe it is very important that young engineers should be shown the necessity for keeping in touch with current mining events in addition to their technical instruction."

FALL GIVES PERSONAL ATTENTION TO MINING BUREAUS

MINING MATTERS will receive the personal attention of Secretary of the Interior Fall. The Interior Department embraces more bureaus and other subordinate bodies than any other government department, and while the Secretary is responsible for the administration of all of them, it is impracticable for him to devote his personal attention to each. Hence, the responsibility for important bodies is delegated to others. During the first ten days of August, a new chart for the administration of the Interior Department was prepared, and this chart shows that the Bureau of Mines, the Geological Survey, the War Minerals, Relief Commission, the Alaska Engineering Commission, and the Field Inspectors will all come directly under the Secretary of the Interior. This arrangement is already in effect.

COMPREHENSIVE STATEMENT ISSUED UPON SILVER SITUATION

ATTENTION IS DIRECTED to the article entitled, "The Silver Situation," on page 348 of this issue. This excellent analysis of a subject of great importance to the mining industry is an official government treatise, which will be in the Federal Reserve Bulletin, to be printed September 1. It is given contemporaneous publicity in the MINING CONGRESS JOURNAL in order that it may reach the large number of silver operators and others who will be particularly interested in the information presented.

PROSPERITY FOR MINING INDUSTRY OBJECT OF CONVENTION

THE PURPOSE of the Twenty-fourth Annual Convention of the American Mining Congress, which is to be held in Chicago, October 17-22, is to plan for prosperity for the mining industries. No single mine operator, no isolated division of the mining industry can in itself effectively attempt to solve the tremendous economic problems which confront the mining industry. Collective thought and co-operative effort are essential, and this convention of the American Mining Congress will bring together the influential representatives of the industry in order to work out plans and policies for concerted action.

In arranging for the convention program the effort has been made to bring out in the general sessions of the convention the vital issues which confront mine operators and to carry on in the conferences and group discussions the development of these issues in such a way that the convention as a whole in its closing session can formulate and endorse a platform which will be of national benefit, both to the mining industries and to the public.

Among the important and vital subjects which will be discussed in Chicago is the topic, "The Railroad and the Mining Industries," to the consideration of which an entire session will be devoted.

Transportation costs and the relationship of transportation to all of the basic mining industries is one of the significant problems which confront the mine operator. The Association of Railway Executives will be represented by a nationally known railroad leader at the convention in Chicago to present the point of view of the railroads in connection with the industrial problems confronting the nation. This address will be followed by a presentation of the point of view of the mining industry in connection with transportation from the standpoint of the various divisions of mining, including metal mining and the coal industry.

Another important session will be devoted to the question of "Co-operative Effort in the Mining Industry and governmental interference." It is generally recognized that co-operative effort in the development of the mining industry is one of the most effective means for preventing wasteful production and in developing continuity of production and distribution of mine products. At the present time efforts to secure co-operation and to develop a consolidation of activities in order to prevent such wasteful methods and to stabilize industrial conditions are subject to the question of governmental interference. The question will be raised at the Chicago convention as to the possibility of developing a movement endorsed by all branches of the mining industry. This is a question of vital significance to mining and all other business enterprises. It will be presented from all points of view in Chicago. There will be an open discussion and it is hoped that as a result of these sessions a policy will be formulated which will be of benefit to all business enterprises.

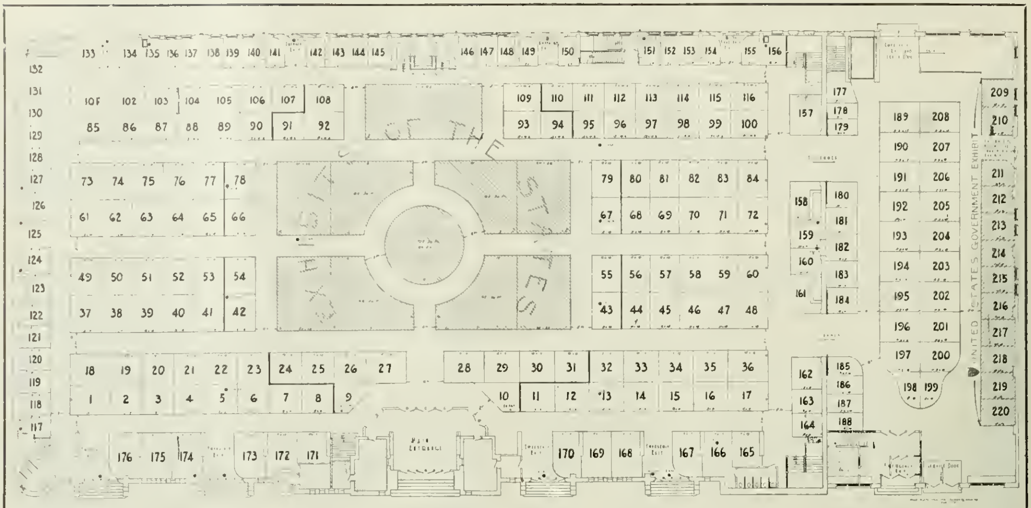
A third general session will be devoted to the important question of "International Developments and Their Relation to the Domestic Mining Industry." American business at the present time is realizing as never before the importance of international relations as a direct factor in connection with business developments here in the United States. This is a question which has more than one side, and in the discussion of this topic there are many points of view. At the convention of the American Mining Congress an effort will be made to present fully the different aspects of this subject.

The importance of foreign trade development in connection with the mining industry will be presented by one of the well known leaders of American banking who has recently returned from abroad where he has had an opportunity of making a special study of European developments in connection with their effect upon domestic industry. His presentation of this subject will be followed by a general discussion from the point of view of different sections of the mining industry.

METAL MINING—The American Mining Congress is the representative of the metal mining enterprises of our great western states. These enterprises have been one of the great factors in the industrial development of this country. The depressed business conditions which have effected them during recent months have had a great effect upon all business. At the convention of the American Mining Congress, therefore, special emphasis will be laid on the problems confronting the further development of mining enterprises in the western states and on the possibility of developing mineral properties in the south and other mining districts. There will be a discussion of the utilization of water power in the further development of mining. There will be a special group session devoted to the question of uniform state legislation in connection with the taxation of mine properties and in the valuation of mines. The problems of labor in connection with mining will be considered from different angles, especially with regard to the possibility of bettering the relationship between employe and employer. Emphasis will also be placed upon the possibilities for new mineral developments, including the utilization of the great deposits of manganese, tungsten and quicksilver.

COAL SESSIONS—The coal industry has been for some time a target for misrepresentation on the part of the public, the press and the politician. The coal industry has the opportunity to eliminate some of this misrepresentation by developing a constructive program which will tend to solve some of the essential problems which confront the coal operator. The sessions devoted to the coal industry at the convention of the American Mining Congress will bring out the question of the legal responsibilities of labor unions, the relationships between labor unions and the coal operators, the possibility of developing co-operative effort without governmental interference and other problems of equal importance.

Aside from the general sessions of the convention the group sessions devoted to special conferences and discussions will be of particular interest. There will be conferences of gold producers, in regard to the problems which confront the production of gold and other precious metals here in the United States.



FLOOR PLAN OF CHICAGO COLISEUM AND ANNEX

The entire space of both buildings, which together form one of the largest exhibit places in the world, will be required for housing the National Exposition of Mines and Mining Equipment, October 17-22. The Exposition will be international in character and upon a greater scale than has ever been attempted in behalf of the mining industry. It has been planned for the dual purpose of educating the public in matters pertaining to the mining industry and bringing to the attention of buyers of mining equipment the best types of machines and supplies.

Another group session will be devoted to the question of taxation, both national and state. There will be a special session devoted to education as well as sessions devoted to a consideration of the oil-shale industry, the development of Alaska and the possibilities for American investment in Mexican mineral enterprises.

STANDARDIZATION CONFERENCES — The work of the Standardization Division of the American Mining Congress is one of its most important features. The standardization conferences at the twenty-fourth annual convention in Chicago will be particularly important and of special interest. This is particularly true of the work which has been done under the able leadership of Colonel Warren R. Roberts in the coal section of the Standardization Division. Two days will be devoted to group sessions on the part of the standardization conferences and one general session of the convention which will be devoted to standardization as a topic.

Generally speaking, the twenty-fourth annual convention of the American Mining Congress will be the most significant industrial meeting of the year. It will bring together 2,500 delegates representing all branches of the mining industry, and the policies formulated at Chicago will be a basis for concerted efforts to bring about adjustments of mutual benefit to the industry and to the public.

NATIONS, STATES AND MINING DISTRICTS TO BE AT EXPOSITION

THE NATIONAL EXPOSITION of Mines and Mining Equipment which is to be held in Chicago in conjunction with the twenty-fourth annual convention of the American Mining Congress is attracting a nation-wide interest.

The Mexican government, which is to be represented with an interesting exhibit illustrative of Mexico's mineral opportunities, has completed its final arrangements for the exhibit in Chicago.

Louis N. Rubalcalba, Assistant Minister of Commerce and Industry, was recently in Chicago to confer with the convention management relative to this exhibit.

At Chicago there will be approximately sixty cases of ore samples illustrative of mining developments in every one of the individual states in Mexico, and it is hoped that this meeting will do much to bring about a closer co-operation in connection with the development of mining enterprises in Mexico.

Many important western mining states have already completed their arrangements for important exhibits. California has arranged to place an exhibit occupying approximately 700 square feet, which will illustrate the production of gold in California and will bring out in a graphic way the importance of the mining industries of that state. In addition to the exhibit from California, there will be exhibits from Utah and Wyoming, an educational exhibit from Arizona and an interesting display from the state of Oregon and an exhibit from Colorado.

The Lake Superior mining district in Michigan, Wisconsin and Minnesota, it is hoped, will be effectively represented by a joint exhibit illustrating mining enterprises, mine operation, and the possibilities for further mining development in these states. A group of representative mining men recently met in Duluth and conferred as to plans for such an exhibit and an active interest is being shown throughout this region in connection with the convention.

The anthracite coal industry, as well as the bituminous coal industry, will be well represented in

LIST OF EXHIBITORS FOR NATIONAL EXPOSITION—COMPLETE TO AUGUST 15

Space	Exhibitor	Address
10	Engineering & Mining Journal	New York, N. Y.
18	Henion & Hubbell	Chicago, Ill.
19		
21	Streeter-Amet Weighing & Recording Co.	
22		Chicago, Ill.
23	Lima Locomotive Works	Lima, Ohio
27	Robert Holmes & Bros.	Danville, Ill.
28	The Jeffrey Co.	Columbus, Ohio
31	Hercules Powder Co.	Wilmington, Del.
32	Jacobsen & Schraeder	Chicago, Ill.
33	Krehbiel Co.	Chicago, Ill.
35	Mine & Smelter Supply Co.	Denver, Colo.
36	Ohio Brass Co.	Columbus, Ohio
37	Fulton-Kenova Mine Car Co.	Kenova, W. Va.
49		
42	Novo Engine Co.	Lansing, Mich.
43	Southern Wheel Co.	St. Louis, Mo.
55		
44	James H. Channon Co.	Chicago, Ill.
45	American Cyanamid Co.	New York, N. Y.
48	Chicago Pneumatic Tool Co.	Chicago, Ill.
54	Goodman Manufacturing Co.	Chicago, Ill.
60	A. Leschen & Sons Rope Co.	St. Louis, Mo.
65	Crane Company	Chicago, Ill.
66	Toledo Pipe Threading Machine Co.	Toledo, Ohio
67	Sullivan Machinery Co.	Chicago, Ill.
68	Electric Service Supply Co.	Chicago, Ill.
72	Geo. D. Whitcomb Co.	Rochelle, Ill.
78	Stimpson Equipment Co.	New York, N. Y.
79	Wyoming Shovel Works	Wyoming, Pa.
80	Frank S. Betz Co.	Hammond, Ind.
84	Philadelphia Storage Bat'ry Co.	Philadelphia, Pa.
88	Keystone Lubricating Co.	Philadelphia, Pa.
89	American Manganese Steel Co.	Chicago, Ill.
90	Hauck Mfg. Co.	New York, N. Y.
92	Mine Safety Appliance Co.	Pittsburgh, Pa.
94	Chase Metal Works	Waterbury, Conn.
95	Lincoln Steel & Forge Works	St. Louis, Mo.
96		
97	Buckeye Blower Co.	Columbus, Ohio
99	Edison Storage Battery Co.	Orange, N. J.
123	Tool Steel Gear & Pinion Co.	Cincinnati, Ohio
125	The American Blower Co.	Detroit, Mich.
142	Wm. Lalor Co.	Chicago, Ill.
143	Federal Electric Co.	Chicago, Ill.
144	Duntley-King Pneumatic Tool Co.	Chicago, Ill.
145	Stonehouse Steel Sign Co.	Denver, Colo.
146	Keystone Cons. Pub. Co.	Pittsburgh, Pa.
147	Electric Storage Battery Co.	Philadelphia, Pa.
148	Bastain Blessing Co.	Chicago, Ill.
157	Hardinge Company	New York, N. Y.
158	Westinghouse E. & M. Co.	Pittsburgh, Pa.
159		
160		
161	Car Dumper & Equipment Co.	Chicago, Ill.
162	Hyatt Roller Bearing Co.	New York, N. Y.
179	Moloch Company	Kaukauna, Wis.
180	Thomas Elevator Co.	Chicago, Ill.
181		
184	Mining & Safety Device Co.	Bowerston, Ohio
82	Ironton Engine Co.	Ironton, Ohio
83		
190	Austin Machinery Co.	Chicago, Ill.
196	Mancha Storage Battery Loco. Co.	St. Louis, Mo.
197		
183	Siebe-Gorman, Ltd.	Chicago, Ill.
93	Chalmers & Williams, Inc.	Chicago Heights, Ill.
150	Allis-Chalmers Mfg. Co.	Milwaukee, Wis.
30	W. A. Jones Foundry & Mach. Co.	Chicago, Ill.
53	Railway & Mine Supply Co.	Chicago, Ill.
47	Templeton, Kenly & Co., Ltd.	Chicago, Ill.
20	Hazard Manufacturing Co.	Wilkes-Barre, Pa.
29	E. J. Longyear Co.	Minneapolis, Minn.
191	Lake Superior Loader Co.	Duluth, Minn.
56	Roberts & Schaefer Co.	Chicago, Ill.
120	General Electric Co.	Schenectady, N. Y.
121		
98	Magnetic Mfg. Co.	Milwaukee, Wis.
15	Sanford-Day Iron Works	Knoxville, Tenn.
16	Myers-Whaley Co.	Knoxville, Tenn.
17		
127	Pittsburgh Coal Washer Co.	Pittsburgh, Pa.
204	Dinwiddie Steel & Mfg. Co.	St. Louis, Mo.
24	Weinman Pump Mfg. Co.	Columbus, Ohio
40	Addressograph Co.	Chicago, Ill.
41		
77	Ludlow-Saylor Mach. Co.	St. Louis, Mo.
200	Atlas Car & Mfg. Co.	Cleveland, Ohio
159	Baldwin Locomotive Works	Philadelphia, Pa.
26	Channon Mfg. Co.	Chicago, Ill.
193	Dings Magnetic Separator Co.	Milwaukee, Wis.
165	Ottumwa Box Car Loader Co.	Ottumwa, Iowa
100	John A. Roebling & Sons Co.	Trenton, N. J.
10	Coal Age	New York, N. Y.
9	Coal Industry	Pittsburgh, Pa.
194	American Mine Door Co.	Canton, Ohio
122	Duro Metal Products Co.	Chicago, Ill.
86	Electric Steel Co. of Indiana	Indianapolis, Ind.
185	American Car & Foundry Co.	New York, N. Y.
186		
91	Nordburg Manufacturing Co.	Milwaukee, Wis.
173	The Dictaphone Company	Chicago, Ill.

Chicago at the National Exposition. The Hudson Coal Company of Scranton, Pa., will have a complete working model of the famous Loree Breaker. This model shows the processes and machinery used in the handling of coal from the mouth of the mine to the loading on the car. This exhibit will occupy a thousand square feet of floor space and will be an extremely interesting demonstration. In addition, there will be a series of educational charts and diagrams illustrative of the various factors in the anthracite industry while the bituminous coal operators will show similar material in connection with the mining of soft coal in the district of the Central Competitive regions.

A central feature of the entire exposition will be the exhibit of Alaska, which has appropriated a special fund for the purpose of featuring the mining possibilities and opportunities for development in the territory. The Alaskan exhibit will be illustrative of the great opportunities which are presented there and will be perhaps the most spectacular of any of the public exhibits.

In addition to the public exhibits, the management of the convention and exposition has already closed more than 100 contracts with large manufacturing firms, which will display all the latest devices in mine equipment machinery. There will also be splendid exhibits illustrating special forms of separators for the concentrating of ore and minerals. Crushers, various forms of ventilating machinery, oil burning appliances, oxygen breathing apparatus, electric hoists, oxyacetylene and oxyhydrogen welding and cutting apparatus, storage batteries, mine locomotives, car dumpers, self-dumping cages, rotary car dumpers, automatic car lifts, helical adjusting loading chutes, special forms of mine weighing and mine recording instruments and an especially interesting exhibit of underground loading machinery.

The Annex of the Coliseum has been so arranged that there will be 250 feet of railway trackage of 42-inch gauge in operation. Mine locomotives will be seen moving and handling cars on this track and there will be a special installation which will show automatic mine doors in operation.

There will be a distinct international flavor to this exposition in Chicago, as most of the Latin-American countries will be represented with official delegations whose members will make an expert study of American mine equipment machinery, and it is believed that in the coming years there will be exhibits at each of the annual meetings of the American Mining Congress from all of the Latin-American countries.

Special arrangements have been made for the entertainment of delegates attending the convention and exposition.

Cornish wrestling is a typical sport in the mining districts in northern Michigan and Minnesota, and there will be at Chicago a championship contest for teams representing various mining districts. The participants will be amateurs of very high rating and they will furnish a clean, stirring series of contests.

Special entertainments have been arranged for the wives of delegates. A general smoker and a formal banquet will be given for the delegates.

The National Exposition of Mines and Mining Equipment will be one of the most interesting and significant industrial expositions which has ever been staged in the United States. It is believed that this meeting will become a notable annual event and that it will do much to focus public attention upon the mining industry.

SECOND NATIONAL STANDARDIZATION CONFERENCE

GREAT INTEREST is being manifested in the special call, which is being issued in conjunction with the twenty-fourth annual convention of the American Mining Congress to be held in Chicago, October 17-22, for the Second National Standardization Conference.

The first preliminary Standardization Conference was called at St. Louis by this organization in 1919. Mining operators as well as manufacturers of mining equipment and supplies took great interest in the movement. Originally the Committee on Standardization of the American Mining Congress was but a small one devoting its time to the study of the standardization of electrical equipment in coal and metal mines. After the meeting in St. Louis a comprehensive committee was organized which included representatives of both the coal and the metal industry. Col. Warren R. Roberts, president of Roberts & Schaefer Manufacturing Company, of Chicago, accepted the chairmanship of the coal mining branch. Charles A. Mitke, a consulting engineer of national repute, of Bisbee, Arizona, accepted the chairmanship of the metal mining branch. The work has now grown to the extent that there are fifteen sub-committees each with an average personnel of ten members. Each of these sub-committees is studying special subjects pertaining to standardization of mining methods, practice and equipment. Safety and welfare committees have during the year 1921 been added to the work of these general committees.

It is planned at the Chicago convention to have the largest attendance ever assembled to discuss the subject of standardization. Invitations have been extended to practically a thousand mining companies, coal and metal, to send representatives of their company to this conference. In addition, practically a thousand invitations have been extended to the manufacturers of mining equipment and supplies. The replies so far received indicate that there will be a record-breaking attendance, and that the reports which are to be submitted by the various sub-committees, through their chairmen, will be of unusual interest. Many of these sub-committees are holding preliminary meetings in order that the reports which they render to the convention may be the most comprehensive possible for them to make at this time.

In Pittsburgh, on August 4, a sub-committee of the Committee on Underground Transportation, of which C. E. Watts, of Windber, Pa., is chairman, held a meeting at the William Penn Hotel.

The meeting was called to order by the chairman at 11 a. m., with the following members of the committee present: R. L. Kingsland, Consolidation Coal Co.; W. K. Hansen, Hockensmith Wheel & M. Car Co.; H. M. Estabrook, Standard Steel Car Co.; R. C. Kepner, American Car & Fdry. Co.; C. E. Watts, Berwind-White Coal Co.; H. M. Motherwell, Bureau of Mines; A. E. Ostrander, American Car & Fdry. Co.; C. I. Witmer, Westmoreland Coal Co.; L. M. Roe, American Car & Fdry. Co.; J. Milliken, Industrial Car Mfrs. Inst.

As this was the first meeting of the sub-committee covering the Standardization of Coal Mine Cars, the chairman explained in considerable detail the real work which the American Mining Congress is endeavoring to do in standardization work; that Colonel Roberts is chairman of the General Committee on Standardization of Coal Mines; that C. E. Watts, mechanical engineer of the Berwind-White Coal Company, is chairman of the Committee on Underground Transportation; that he in turn had subdivided his work into four committees, one on the subject of locomotives, one on tracks and signals, one on shaft equipment and one on design and construction of coal mine cars, including safety appliances. This latter subject was the one assigned to this committee.

Some portions of the report of the Committee on Underground Transportation, submitted to the American Mining Congress in Denver last fall, were read, showing that definite recommendations covering track gauge, track curvature, wheel base and over-all length of cars had been made.

There was a spirited discussion relative to the best means of approaching the possibilities of standardizing parts of coal mine cars. The impracticability of establishing definite standards for cars operated in existing mines was well developed. It was decided that the best results woud be accomplished should this committee make recommendations for some of the detailed parts of cars rather than to attempt to make definite recommendations covering car lengths, widths, heights and sizes.

It was decided that specifications for materials, sizes and types of such items as rivets, bolts, car irons, drawbars, bumpers and couplings, could well be standardized; that recommendations governing sizes of lumber and sheet steel for car bodies could be given; that the question of wheels, sizes and shapes could well be investigated and definite recommendations be made.

As a result of these deliberations committees on the following subjects were appointed: Types of hand brakes; sizes and types of drawbars, bumpers and couplings; sizes of rivets, bolts and irons for both wood, steel and composite car bodies; sizes of lumber and steel shapes for car bodies; and the Committee on Wheels will present definite recommendations leading to standardized diameters, treads and flanges, with definite recommendations covering the length of wheel hubs together with the relations of the hub to the flange of the wheel for both roller and plain bearings for the most generally used sizes of cars.

R. L. Kingsland, general superintendent, Consolidation Coal Company, Fairmont, W. Va., was appointed chairman of the Committee on Sizes of Rivets, Bolts and Irons for both wood, steel and composite car bodies. C. K. Witmer, master mechanic, Westmoreland Coal Company, Irwin, Pa., was appointed chairman of the Committee on Wheels; H. M. Motherwell, mechanical engineer, U. S. Bureau of Mines, Pittsburgh, Pa., was appointed chairman of the Committee on Types of Hand Brakes. Chairmen of the two remaining committees will be designated at a later date.

The chairman of these sub-committees were respectively asked to make up their own individual committees, to represent as far as consistent the several coal fields and yet keep their committees sufficiently small to make good active working committees; to solicit particularly the aid of mine operators in their work and to call on car manufacturers for assistance when desired. The several chairmen were requested to get their committees together and work just as soon as possible. It was explained that the chairman of the committee as a whole is very glad to co-operate with them at all times and to place at their disposal all the data on file covering the standardization work of the Industrial Car Manufacturers' Institute.

There was material discussion on the desirability of having definite specifications covering the materials used in coal mine cars. The advantage of using well known standard specifications that would be suitable for the construction of the cars was well discussed with the result that it was moved, seconded and carried, that the American Society for Testing Materials' specifications should be adopted as standards for steel plates, bars and shapes, for bolts and rivets, and for grey iron, malleable and steel castings.

Many members of the committee will attend the annual meeting of the American Mining Congress at Chicago, October 17 to 22.

No effort is being spared to make this, the Third Annual Standardization Conference to be called under the auspices of the American Mining Congress, the greatest meeting of its kind ever held. We believe that its importance calls for the corporation of operator and manufacturer alike and that the deliberations will be of untold value to the mining industry.

RHODES WOULD STIMULATE GREATER USE OF NON-METALS

Representative Marion E. Rhodes, of Missouri, Chairman of the House Committee on Mines and Mining, has introduced a bill providing for the investigation by the Bureau of Mines of non-metallic minerals and their chemical derivatives. Included within the purview of the measure are about forty-five different minerals, embracing all of those contemplated when the stimulation of the production of war minerals was first discussed. Immediately after its introduction the measure was sent to the Secretary of the Interior for consideration, in conformity with the usual policy of the Mines Committee.

Congressman Rhodes introduced the measure of his own volition, and not upon the request of the Bureau of Mines or other authorities in the Department of Interior. It is his firm belief that the commercial possibilities of the minerals involved in the measure, including such minerals as sulphur, phosphate rock, feldspar, potash, mica, graphite, talc, barytes and limestones are not fully realized, and that investigation by the Bureau of Mines will result in their increased utilization and the development of several new American industries as well as the enlargement of many which already exist.

The bill introduced by Congressman Rhodes does not carry an appropriation. Should the measure be approved by the Department of Interior and enacted into a law by Congress, an appropriation will be asked for.

SPEEDY WORK BY MINES BUREAU

Within twenty-four hours after the last reports had been received from state mine inspectors, the United States Bureau of Mines had tabulated the June coal mine accident statistics and made public announcement. William W. Adams, who is in direct charge of this phase of the bureau's work, had arranged for securing and announcing the figures in regular newspaper fashion. The last report from the inspectors came by telegraph, and was itself dispatched as soon as the operators had turned in their figures. Calculation of summaries for the entire United States waited upon the receipt of this one message, but the work was all done within the space of one working day.

The report of the bureau showed that 155 men were killed at the coal mines in June, the record being 29 percent better than that of June last year. Equated to a production basis, the number of deaths per ton produced was 3.68, as compared with 4.22 a year ago. An interesting feature of the month was the non-occurrence of any fatalities from gas or coal dust explosions.

The fatality record for the first six months of 1921 is not so good as that of the corresponding period of 1920. During the first half of last year 1,093 were killed by accidents at the coal mines, and only 970 during the first six months of this year, but during the two periods 301,000,000 tons were produced last year as against only 242,000,000 this year. The fatality rate was 4.01 per million tons produced during the first half of 1921 as against only 3.63 per million tons during the parallel period of 1920.

ADDITIONAL TAX ASSESSMENTS—WHAT THEY ARE AND HOW TO MEET THEM

By McK. W. Kriegh

IN THE AUGUST NUMBER of the Mining Congress Journal the settlement of pending and impending additional assessments was characterized as the first task of the Income Tax Unit. Not only are these adjustments of first importance to the Revenue Bureau, but they are of vital consequence to the wasting industries, now laboring under multiplied difficulties, and to every business man in the nation. The fact that the final determination of tax liability has been delayed from two to four years in so many thousands of cases, and that the uncertainty resulting from this situation has impaired the credit standing of the individuals and corporations involved, has prevented improvement, expansion, and development, and has been one of the causes of the reduction to an absolute minimum of working forces employed, and that this condition of affairs has been an impelling reason for business depression, impeded progress and unemployment is universally recognized. This retarding and depressing influence must be removed by the settlement of these pending cases which originated mainly during the war period; and if, to accomplish this end, it is necessary for Congress to appropriate an additional $5,000,000 or $10,000,000 for agencies and adequately paid administrative forces needed to complete the audits, make valuations, hold hearings, and expedite assessments, that should be done at once, for such an appropriation is a mere pittance in comparison with the $1,000,000,000 or more which competent authorities have testified is involved. The business of the nation is paying the vast annual bill of $4,000,000,000 required to finance the federal government and business is entitled to the best service and protection which those who are entrusted with the nation's affairs can give. The interference of partisan politics and private prejudices in dealing with this problem will not be countenanced by the taxpaying public.

—Morris, for George Matthew Adams Service.

NOW, THEN, ALL TOGETHER, THAT GOOD OLD SONG—E-con-o-mee!

Vast appropriations have been made for various other agencies created to expedite settlement of claims growing out of war contracts, war industries, government control of transportation, and government regulation of food supplies, and every one of these agencies has resulted in a large out-go from public funds. Why then does Congress hesitate to appropriate adequate funds for an agency which will increase the in-flow of revenue?

Something must be done to facilitate the final determination of tax liability and to remove the uncertainty which now prevails to the detriment of business.

Additional assessments are amounts found to be due the federal government after return has been made, the amount shown to be due on the original return paid or liability therefor assumed, and government audit of the return, books, and records of the taxpayer discloses additional tax liability.

—From N. Y. Tribune.

WHEN CONGRESS RETURNS FROM ITS VACATION

NATIONAL MANUFACTURERS APPROVE MINING CONGRESS TAX SUGGESTIONS

A FEDERAL TAX SETTLEMENT BOARD as suggested upon numerous occasions during the last six months by the Tax Division of the American Mining Congress was advocated during the last days of the tax hearings before the House Ways and Means Committee by James E. Emery, of Washington, D. C., representing the National Association of Manufacturers. Mr. Emery also advocated decentralization of tax administration by having the settlement board or other commission meet in various parts of the country to hear cases and render decisions which would be binding upon the government. The latter suggestion, while not definitely sponsored by the Mining Congress, has been put forward by the Tax Division as interesting and worthy of consideration.

"We believe," Mr. Emery said, "that one of the most practical things which this committee could do to facilitate administration of the tax laws would be to create what exists in every tax-levying country except this one, what is known as a board of income tax examiners, having duties similar to those of the war contract adjustment board, composed of tax experts, whose final judgment on behalf of the government settles the issue before them.

"I would be willing to go a step further. Today the system is suffering from too high a centralization. If we could decentralize the board and have them sit at Portland, Me., and Fort Worth, Tex., in Washington or Oregon, and go from place to place, then the business man would not have to come to Washington in order to get a settlement of his taxes. Business men frequently pay taxes to which they object because they cannot afford the expense of coming to Washington and contesting with the government.

"It has been the practice of our courts to bring justice to the people rather than to compel the people to hunt justice. Thus, we have our district courts in every state, and it is only in appealed cases that litigants have to travel great distances to reach the courts. There is no reason why we cannot apply that system to the federal revenue administration.

"In Great Britain, where no man has to travel more than five hours to reach the capital, they have boards of inland revenue and assessors in every district. There is no reason why in a large country like ours men should not have an opportunity to adjust their claims against the federal government in their own state and without being compelled to come to Washington.

These assessments come to the notice of the taxpayer, first, in the form of a letter setting forth, oftentimes obscurely, alleged discrepancies in the return, and the basis used in determining the additional amount of tax claimed, and, second, in the form of a bill or notice to the taxpayer demanding payment of the amount alleged to be due within ten days from the date of mailing the notice to avoid penalties and interest. The so-called assessment letter reaches the taxpayer from one to four years after return is made, and the collector's bill arrives within approximately sixty days after the letter is received, unless, in the meantime, the taxpayer is able to submit evidence which will prove that the assessment is erroneous.

In many cases it has been possible for the taxpayer to show that the additional tax liability claimed is erroneous before issuance of notice by the collector, and in such instances the assessment is cancelled. In cases where the collector's bill has been received, payment must be made within ten days from the date such bill was mailed, or a claim for abatement must be filed within that period. If the claim for abatement is based upon reasonable grounds, and is sustained by proper affidavits of the taxpayer or of other parties cognizant of the facts, the collector may suspend collection of the additional tax claimed pending determination of the claim for abatement.

It is not the purpose of this article to deal primarily with the administrative methods of the Revenue Bureau, but rather to review the whole situation as it strikes the average taxpayer, and, if possible, to offer some suggestions which will be helpful both to him and to his servants employed in the government agencies in securing sympathetic co-operation instead of arbitrary results accomplished without that co-operation.

Not every taxpayer can be an authority on that comprehensive and technical volume known as "Regulations 45," sometimes termed "the revenue agent's Bible." For that reason the average taxpayer who receives notice of an additional assessment usually experiences a tremor, not unlike the sensation felt by the motorist, fifty miles from a filling station, who finds his gasoline tank empty, or the business man who receives notice of an overdraft from his bank when he has no cash in his pocket, no accounts receivable, no dividends coming in, and no property in his wife's name. He has two alternatives, either to pay the assessment or prove that it is erroneous, and his slight knowledge of methods of procedure frequently raises doubt as to the advisability of the latter course.

The three most important questions usually involved in additional assessments against mining companies are invested capital, depletion, and depreciation; and invariably it is because the Revenue Bureau has reduced invested capital or the deductions for depletion and depreciation that additional tax liability is shown. Other deductions which may be reduced or disallowed by the Revenue Bureau on account of lack of supporting evidence or by reason of erroneous calculations are those claimed for losses, such as obsolescence, amortization and bad debts.

Immediately upon receipt of an assessment letter, steps should be taken to verify the government's computations. If they are correct and are based upon the facts, payment cannot be avoided. If they are in error or if the return and auditor's report upon which they are based do not reflect the true conditions, or if, as in many instances, they are arbitrary because of failure to submit complete schedules with the returns, upon application to the Commissioner of Internal Revenue, sufficient time may be secured within which to assemble data and prepare and file amended returns, together with the required schedules, which show the correct status of the business.

If invested capital has been reduced by the government, consideration must be given to the elements—cash or cash value actually paid in by the stockholders, including surplus and undivided profits—of which it is composed. It may be found that invested capital can be increased: (1) by claiming fair market value of mineral or other tangible properties conveyed by gift or at value, accurately ascertainable or definitely known at date of transfer, clearly and substantially in excess of the cash or the par value of stock or shares paid therefor, which excess may properly be deemed paid-in surplus, or (2) by segregating and restoring to capital accounts expenditures made prior to January 1, 1917, for organization, structures, equipment, plant, fixtures, construction, development, etc., which under former accounting methods may have been charged on the books as operating expense; (3) by ascertaining whether that part of invested capital representing the natural resources has been improperly reduced by the deduction therefrom of more than the depletion actually sustained, as in the case of mineral property valued as of March 1, 1913, where the depletion allowable as a deduction exceeds the depletion sustained; (4) by restoring amounts representing excessive depreciation charged off in prior years on property still owned and in use; and (5) by including amounts which have been expended in the past for intangible property of any kind where the corporation specifically paid such amounts for the intangible property as such. (See Articles 840-845, Regulations 45.)

If the deduction for depletion has been reduced, the assessment letter should be carefully checked for errors in computation. In the case of property acquired prior to March 1, 1913, if no error has been made, but the Revenue Department has set aside the valuation claimed as of March 1, 1913, and has used an arbitrary valuation as of that date, it will be necessary for the taxpayer to prove by competent evidence that the valuation shown in the return is based upon facts. This can be done by establishing the value which would have caused a transfer between a willing seller and a willing buyer as of that particular date. Affidavits as to cost, actual sales and transfer of similar properties, market value of stock or shares, royalties and rentals, value fixed for capital stock tax, valuation for state and local taxation, partnership accountings, records of litigation involving the property's value, disinterested appraisals by approved methods, bona fide offers to purchase, and other factors, will be given due consideration.

If the depreciation claimed has been disallowed as excessive, affidavits and other evidence tending to show that the amount claimed as a deduction was reasonable because of unusual circumstances and conditions which shortened the useful life of the property, may be filed in substantiation of the claim. The same is true of evidence submitted with respect to other losses claimed on account of obsolescence, amortization, bad debts, sale of capital assets, etc., which have been reduced or disallowed by the Revenue Bureau.

It will be realized that rules of procedure cannot be laid down to fit every situation which may arise, as each case may involve such variations in the facts presented that it must be decided upon its individual merits irrespective of precedent or conditions existing in other branches of the same industry. The main point to be remembered is that *the facts control*, and not necessarily records which may not clearly reflect the true taxable income. No attempt has been made in this article to deal with technical phases of income tax procedure, but merely to suggest the idea that great dissatisfaction and injury grow out of the uncertainty which exists in the mind of the average mine operator from the moment return is made, and which continues to exist through a period of years, until final tax liability is determined or the statute of limitations has run, which is unfair and disastrous to the industry, and a situation which Congress has the power to correct; and that prompt determination of tax liability as well as closer co-operation on the part of the government agencies concerned is imperative if business is to resume a normal status. It is not intended to convey the impression that any taxpayer should risk prosecution by seeking to evade the payment of taxes rightfully assessed; but instead to reassure those who may be affected by additional assessments that their cases may not be as serious as the receipt of an assessment letter or collector's tax bill might imply, and to encourage the employment of every lawful agency or means for finally determining and verifying the tax liability before payment.

IDEAL ACCIDENT STATISTICS AIM OF MINES BUREAU

ONE NEW QUESTION which has been added to coal and metal mining questionnaires sent out annually by the U. S. Bureau of Mines will, if answered by the operators enable the bureau to publish practically ideal fatality and accident statistics. This question is, "How many hours constitute a shift?"

Accident statistics both for fatalities and injuries are tabulated upon the basis of 300,000 shifts, which is equivalent to the labor of 1,000 men for 300 days, or for one year. Such statistics, which have been issued by the Bureau of Mines for several years, are the most reliable obtainable, but, nevertheless, not as reliable as they ought to be, for the reason that workmen are always considered as doing a day's work when they report for duty, even though they may work only two or three hours; but if the operators all answer the question as to the number of hours in a shift it will be possible for the Bureau of Mines to equate all statistics upon the basis of 300 working days of the same length, which will probably be eight hours. Accident statistics calculated upon such a basis will approximate absolute accuracy as nearly as it is possible to do so.

The Bureau of Mines is also attempting to get accident reports from each individual mine in the country rather than from each mining company, which may conduct any number of operations.

Statistics of recent years, both for fatalities and injuries, are not exactly comparable to those of former years when workmen averaged nine to ten hours a day. All questionnaires upon which statistics for the year 1921 will be based have been printed, and all of them will carry the question of how many hours constitute a shift. All annual statistics will be calculated hereafter upon the basis of 300 working days of equal hours.

EIGHTY ENTRIES FOR INTERNATIONAL MINE RESCUE MEET

THE INTERNATIONAL First Aid and Mine Rescue Meet, to be held in the Coliseum, St. Louis, from September 1 to 3, inclusive, promises to be a notable event. Sixteen states and the Canadian province of British Columbia will be represented by first aid and mine rescue teams. Mining men of national repute will address the various meetings and the governments of Great Britain, Belgium and Canada will be represented by delegates. It is expected that President Harding will use this occasion to deliver a message to the million miners of the country on the need for safety in mining.

The contests will be held under auspices of the United States Bureau of Mines, the branch of the Federal Government which is particularly charged with the investigation into the causes of mine accidents and the promotion of safety and health in mining. Co-operating with the Federal Bureau will be the American Red Cross, the National Safety Council and miners' and operators' organizations and associations.

Sixty-four first aid teams have been entered in the contests for the international championships and sixteen mine rescue teams have forwarded their entry blanks to the Pittsburgh station of the Bureau. These teams represent the mining districts of New Mexico, Illinois, Pennsylvania, Maryland, Colorado, Virginia, Utah, Kentucky, Iowa, Oklahoma, Arkansas, West Virginia, Kansas, Alabama, Missouri and Wyoming. Depressed mining conditions in Mexico has made it impossible for the companies operating there to be represented. The Western Fuel Corporation of Canada, Ltd., has entered a first aid team.

F. J. BAILEY

Assistant to the Director of the Bureau of Mines, and official head of mine rescue and safety work in the United States. Mr. Bailey will personally direct the forthcoming international competitive exhibition.

The opening address will be made by H. Foster Bain, director of the Bureau of Mines, at a meeting to consider possible standardization and improvement of mine rescue methods. This meeting will be held at the Statler Hotel on the morning of September 1, with George S. Rice, chief mining engineer of the Bureau, as the presiding officer. J. W. Paul, chief of the Bureau's coal mine investigations, will read a paper on the "History of Development of Mine Rescue Apparatus," discussion of which will be opened by G. S. McCaa, mine safety engineer of the Bureau.

"The Need for Standardization in Mine Rescue Work," is the subject of a paper prepared by Hon. William Sloan, Minister of Mines, British Columbia. As illness will prevent Mr. Sloan's presence, this paper will be read by Inspector Strachan of British Columbia, who has been designated to represent the province. Discussion on this paper will be opened by Daniel Harrington, district mining engineer of the Bureau. Robert M. Medill, director of the Illinois Department of Mines and Minerals, will deliver an address on "Mine Rescue Work from the Viewpoint of the State Inspector," with discussion opened by C. A. Allen, district mining engineer of the Bureau.

A. J. Moorshead, president of the Madison Coal Corporation of Chicago, will speak on "Mine Rescue Work from the Viewpoint of the Mine Operator." It is expected that Orr Woodburn, director of the Globe-Miami district Mine Rescue and First Aid Association, Globe, Ariz., will open the discussion on the operators' phase of the subject.

First aid contests will be held on the afternoons of September 1 and 2, with the mine rescue contests on the forenoon and afternoon of September 3.

The discussion of mine rescue methods will be continued on the evening of September 1, being opened by Dr. R. R. Sayers, chief surgeon of the Bureau of Mines, who will talk of "Physiological Investigations in Relation to Mine Rescue Work." Discussion on this subject will be opened by Dr. A. F. Knoefel, Terre Haute, Ind. D. J. Parker, chief of the division of Mine Rescue Cars and Stations of the Bureau, will read a paper on the "Mine Rescue Work of the United States Bureau of Mines," with a discussion to be opened by R. H. Lambie, chief of the Department of Mines of West Virginia. Mr. Harrington will read a paper prepared by H. J. Rahilly, mining engineer of the Anaconda Copper Mining Company, on "Breathing Apparatus in Fire Fighting and Mine Recovery Work," and Mr. Allen will read a paper prepared by A. C. Watts, chief engineer of the Utah Fuel Company, Salt Lake City, on the same subject.

Diplomas and medals of honor of the Joseph A. Holmes Safety Association will be presented to twelve heroes of mine disasters, or their nearest relatives, as four of the awards are posthumous. The presentation will be made by H. Foster Bain, president of the Association, at its meeting in the Coliseum on the evening of September 2. G. W. Traer, of the Universal Coal Products Co., Chicago, will speak on "Joseph A. Holmes and Safety in Mining," detailing the work of the first director of the Federal Bureau of Mines, whose life was devoted to obtaining better working conditions in the mines and more friendly and co-operative relations between operators and miners.

F. J. Bailey, assistant to the director of the Bureau of Mines, will speak on the proposed organization of local mine safety chapters of the Joseph A. Holmes Safety Association. J. W. Paul, chairman of the committee on awards of the association, will speak on "Diplomas and Medals of Honor of the Joseph A. Holmes Safety Association."

Awards will be made to six Butte miners for their rescue work during the fire at the Leonard mine of the Anaconda Copper Mining Company on February 28, 1917. These men are K. P. Krueger, Lew E. Ryan, Frank Pierce, Herbert Farlin, George Reichert and John Gregovich, all of Butte. Medals and diplomas will be presented to the nearest relatives of Francis Henry Murphy and William Ferrington, both of Franklin, Kansas, who lost their lives on November 2, 1918, in an effort to rescue two shotfirers who were imprisoned following an explosion in a mine. Medals and diplomas will be awarded, also, to Alex Ogilvie and Thomas Gold, of Lehigh, Okla., and the nearest relatives of Lasco Robinson and Clarence Williams, of Degnan, Okla., will receive the medals and diplomas awarded for endeavoring to warn miners of an impending explosion in the No. 19 mine of the M. K. & T. Co., the two men being killed, with eight others, when the explosion occurred before warning could be given.

Pries to the winning contestants will be awarded by Director H. Foster Bain as the closing event of the concluding banquet, to be held in the Coliseum on the evening of September 3. Four phases of the mine safety problem will be emphasized in a group of short talks. Governor A. M. Hyde, of Missouri, will speak on "The State's Interest in the Safety Movement"; J. G. Bradley, president of the National Coal Association, will speak on "What the Mine Operator Can Do For Safety and Health In and About the Mines"; John L. Lewis, president of the United Mine Workers of America, will speak on "The Miners' Interest in the Safety Movement"; and Marion E. Rhodes, chairman of the House of Representatives Committee on Mines and Mining, will speak on "What the Federal Government Can Do to Promote Safety in the Mining Industry."

D. J. PARKER

Chief of the Division of Mine Rescue Cars and Stations, Bureau of Mines, and member of the Executive Committee in charge of the St. Louis meet. Mr. Parker is seen adjusting protective equipment preparatory to entering a burning mine.

Among the distinguished visitors at the meet will be Lieut. Col. J. A. S. Ritson, D. S. C., M. C., representing Great Britain, who rendered distinguished service during the late war. He has given considerable study to the use of rescue apparatus in military training. The Belgian government will be represented by E. Lemaire, director of the National Institute of Mines of Fremeries, at Erbisoeul. Mr. Lemaire holds the title of Chief Engineer of Mines. Representatives of foreign mining departments, state mine inspectors, safety engineers and representatives of mine rescue organizations, will participate in a discussion on the possible improvement and standardization of mine rescue methods. This discussion will be held on the morning of September 2, following a paper to be read by George S. Rice, chief mining engineer of the Bureau. It is expected that the conferences will be continued after the formal mine rescue and first aid contests are completed and the foreign representives are to be given an opportunity of visiting the Pittsburg station of the Bureau of Mines, with its experimental mine at Bruceton, Pa.

Various manufacturers of safety devices related to mining will have exhibits at the meeting and the Bureau of Mines will have on display some of the devices which have been perfected in the federal laboratories.

Despite the present depression in the mining industry, the number of teams entered in the contests, the standing of the speakers who have accepted invitations to address the meetings, the enthusiasm on the part of the mining men of the Mississippi Valley and the representation of the foreign mining men in the conferences cause the officials of the Bureau of Mines to feel that the St. Louis meet will be the most successful group of contests conducted under auspices of the Bureau.

TEAMS ENTERED IN ST. LOUIS SAFETY TOURNAMENT

FIRST AID TEAMS—Lehigh Coal & Navigation Co., Lansford, Pa.; Inland Collieries Co., Indianapolis, Pa.; U. S. Fuel Company, Westville, Ill.; U. S. Fuel Company, Universal, Ind.; Central Coal & Coke Co., Bevier, Missouri; Pierce-Hess Coal Co., Bevier, Missouri; United Mine Workers of America, Local Union 1814, Denning, Ark.; Owl Creek Coal Co., Gebo, Wyoming; Knox County Operators' Association, Bicknell, Ind.; Superior Coal Co., Gillespie, Ill.; H. C. Frick Coke Co., Lamberton, Pa.; Rembrandt-Peale, St. Benedict, Pa.; O'Gara Coal Co., Harrisburg, Ill.; Stonega Coke & Coal Co.,, Big Stone Gap, Va.; Clinchfield Coal Corporation, Clinchco, Va.; Clinchfield Coal Corporation, Wilder, Va.; Big Creek Coal Co., Harrisburg, Ill.; District 11, United Mine Workers' of America, Terre Haute, Ind.; Consolidation Coal Co., Jenkins, Ky.; Consolidation Coal Co., McRoberts, Ky.; Pana Coal Co., Pana, Ill.; Standard Oil Co., Carlinville, Ill.; Madison Coal Corporation, Carterville, Ill.; The Consolidated Coal Co. of St. Louis, Herrin, Ill.; Madison Coal Corporation, Central City, Ky.; Nokomis Coal Co., Nokomis, Ill.; Local Union 517, United Mine Workers' of America, Tovey, Ill.; La Salle County Carbon Coal Co., La Salle, Ill.; The New River Company, Scarboro, W. Va.; The New River Company, Mabscott, W. Va.; St. Louis Rocky Mountain & Pacific Coal Co., Raton, N. Mex.; Superior Coal Co., Gillespie, Ill.; Bertha Coal Co., Pittsburgh, Pa.; Miami Coal Company, Clinton, Ind.; Franklin Coal & Coke Co., Royalton, Ill.; Colorado Fuel & Iron Co., Pueblo, Colo.; Dodds Coal Mining Co., Carrier Mills, Ill.; Blackwood Coal & Coke Co., Blackwood, Va.; Independent Coal & Coke Co., Salt Lake City, Utah; Tecumseh Coal Co., Bicknell, Ind.; Vigo Mining Co., Syllivan, Ind.; Crescent Coal Co., Evansville, Ind.; Pioneer Coal Co., Kettle Island, Ky.; Dewar Coal Mining Co., Dewar, Oklahoma; Consolidated Coal Co., Buxton, Iowa; United Mine Workers' of America, District 13; Saline County Coal Operators' Association, Harrisburg, Ill.; Scandia Coal Co., Madrid, Iowa; Rock Island Coal Mining Co., Alderson, Okla.; Central Coal & Coke Co., Huntington, Arkansas; Jackson Hill Coal & Coke Co., Local Union No. 2382, United Mine Workers' of America, Shelburn, Indiana; Davis Coal & Coke Co., Thomas, W. Va.; Western Coal & Mining Company, Pittsburgh, Kansas; Woodward Iron Co., Dolomite, Ala.; De Bardeleben Coal Co., Sypsey, Ala.; United Mine Workers' of America, District 13, Iowa Coal Operators' Association, Buxton, Iowa; United Mine Workers' of America, District 13, Iowa Coal Operators' Association, Buxton, Iowa; Harrisburg Colliery Co., Harrisburg, Ill.; Saline Gas Coal Co., Harrisburg, Ill.; Springfield District Coal Mining Co., Springfield, Ill.; Western Fuel Corporation of Canada, Ltd., Nanaimo, British Columbia; Benton District Team, Benton, Ill.; J. K. Dering Coal Co., Clinton, Ind.; Harrisburg Coal Mining Co., Harrisburg, Ill.

MINE RECUE TEAMS—Inland Collieries Co., Indianola, Pa.; Owl Creek Coal Co., Gebo, Wyoming; Knox County Operators' Association, Bicknell, Ind.; H. C. Frick Coke Co., Leisenring, Pa.; Berwind-White Coal Mining Co., Windber, Pa.; Madison Coal Corporation, Carterville, Ill.; The Consolidated Coal Co. of St. Louis, Herrin, Ill.; La Salle County Carbon Coal Co., La Salle, Ill.; The New River Co., McDonald, W. Va.; Pana Coal Co., Pana, Ill.; Franklin Coal & Coke Co., Royalton, Ill.; Independent Coal & Coke Co., Salt Lake City, Utah; Tecumseh Coal Co., Bicknell, Ind.; Saline County Coal Operators' Association, Harrisburg, Ill.; Springfield District Coal Mining Co., Springfield, Ill.; Benton District Team, Benton, Ill.

ASSESSMENT WORK PERIOD CHANGED

BOTH HOUSE AND SENATE have passed the bill changing the period for doing annual assessment work. The President is expected to sign it immediately upon its receipt.

The bill does not change the period for doing assessment work from the calendar to the fiscal year. The new period in which work must be done expires at noon on July 1, or twelve hours after the beginning of the fiscal year. As finally enacted, the measure is believed to be satisfactory to the mining industry. The bill provides as follows:

"Provided that the period within which the work required to be done annually on all unpatented mineral claims located since May 10, 1872, including such claims in Alaska, shall commence at 12 o'clock noon on the first day of July succeeding the date of location of such claim; provided further that on all such valid existing claims the annual period ending December 31, 1921, shall continue to 12 o'clock noon, July 1, 1922."

Under this amendment the period in which 1921 assessment work must be performed will expire at noon on July 1, 1922. During the debate, Representative Mann, of Illinois, who joined with the opposition, asserted that the sole purpose of the measure was to gain an additional six months for the completion of 1921 assessment work. Members of the committee which considered the bill and also the author replied that the committee was forced to choose between curtailing the assessment period by six months or extending it six months, and that it chose the latter.

Representative Summers of Washington pointed out that the bill afforded the opportunity of doing assessment work for two years by making one visit to the claim site in midsummer, by the simple process of completing the work for one year before noon on July 1, and starting the work for the next year immediately after July 1.

WAR MINERALS LEGISLATION STILL ON HOUSE CALENDAR

THE WAR MINERALS bill, which gives the Secretary of the Interior authority to consider claims which were actually mailed but not received in Washington prior to 12 o'clock noon, June 2, 1919, was still on the House calendar on August 20. Efforts to obtain a rule for its consideration were futile.

Considerable discussion has arisen as to whether this measure, if enacted into law, would give the Secretary of the Interior authority to make amended awards in war minerals cases, which were acted upon by the preceding administration, whose decision in many instances were unsatisfactory to the claimants. It is considered likely that, when the bill does come up for consideration before the whole House, an amendment will be offered which will give the Secretary of the Interior this authority beyond all question.

An interestng recent development in the war minerals situation was the decision of the Comptroller of the Treasury in the Samuel H. Dolbear case. The Comptroller denied the request of the Secretary of the Interior for a reconsideration of the case, on the ground that such permission would carry with it authority to reconsider all other cases heretofore acted upon.

THE SILVER SITUATION

(Courtesy of FEDERAL RESERVE BOARD)

FLUCTUATIONS in the price of silver are determined by a large number of circumstances, among which may be mentioned especially: (1) Quantity produced, of which about two-thirds originates in the United States and Mexico; (2) demand in the western world, i. e., in Europe and America, both for the arts and for coinage purposes; (3) demand in the Orient, i. e., in China and India, depending mainly on the balance of payments of these countries and on their general level of prosperity, but affected also over short periods of time by speculation; (4) the general price level, or in other words, the purchasing power of gold.

PRICE OF SILVER AND THE GENERAL PRICE LEVEL

Fluctuations in the price of silver, compared with fluctuations in the wholesale price index compiled by the Bureau of Labor Statistics, are shown in the table below, and in the chart on page 349. The price of silver is shown per fine ounce in actual monthly averages for the New York market and in percentages of the 1913 average of 61.241 cents.

PRICE OF SILVER AND WHOLESALE PRICE INDEX

	Average New York price of silver per fine ounce.	Per cent of 1913 average of $0.61241.	Wholesale price index.
1918.			
November	$1.01500	166	206
December	1.01587	166	206
1919.			
January	1.01558	166	203
February	1.01500	166	197
March	1.01495	166	201
April	1.01500	166	203
May	1.08020	176	207
June	1.11402	182	207
July	1.07332	175	218
August	1.12386	184	226
September	1.15636	189	220
October	1.20692	197	223
November	1.30446	213	230
December	1.33072	217	238
1920.			
January	1.33899	219	248
February	1.32665	217	249
March	1.27287	208	253
April	1.20576	197	265
May	1.03495	169	272
June	.92789	152	269
July	.92935	152	262
August	.96948	158	250
September	.94510	154	242
October	.84187	137	225
November	.78490	128	207
December	.65503	107	189
1921.			
January	.66388	108	178
February	.59813	98	167
March	.56736	93	162
April	.59830	98	154
May	.60310	98	151
June	.59125	97	148
July	.60798	99	148

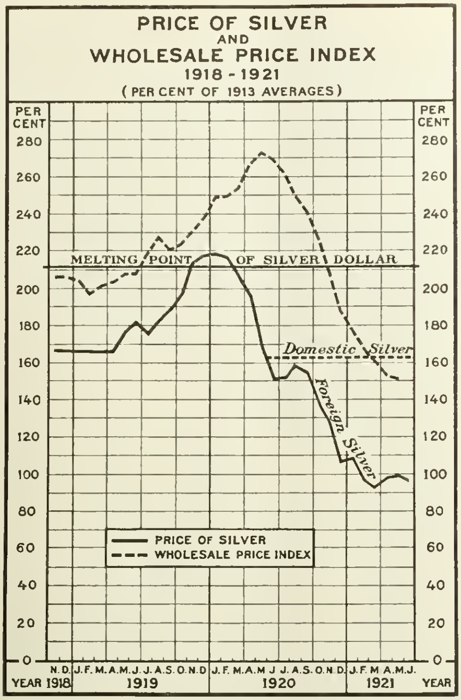
There is a striking similarity between the wholesale price curve and the silver price curve. Silver, however, moved at a considerably lower level than general wholesale prices, touching its peak in January, 1920, at 219 per cent of the 1913 price, while the wholesale price index continued to rise until May of that year, when it reached 272 percent. Although the price of silver has declined rapidly since January, 1920, its downward course shows three distinct breaks, one in July, 1920, one in January, 1921, and the third in April. These breaks are independent of the wholesale price movement, which shows an uninterrupted decline, while since March, 1921, the general trend of silver prices has been upward. The temporary increase in the price of silver in July, 1920, occurred when the United States Treasury began to purchase American silver at a fixed price of 99½ cents. These purchases were made under the terms of the Pittman Act,* which provided for the breaking up and sale of silver dollars and their repurchase when the price of silver should not exceed $1 per ounce. The original sales amounted to 208,000,000 ounces. The Treasury proceeded to repurchase promptly as soon as the legal purchase price was reached. The act provided that the silver purchased should be of American origin and refined in the United States. The Treasury, however, placed a liberal interpretation on this clause to the effect that individual silver need not be identified so long as each producer should sell as American silver that portion of his silver product which corresponded to the silver mined and refined in this country. Total purchases of silver by the Treasury up to July 25, 1921, amounted to 63,600,000 ounces, or to almost one-third of the total amount sold. It is to be expected, therefore, that the government will continue to purchase silver for two or three more years. The entry of the United States into the silver market and the elimination from the world market of the American domestic silver supply has had a steadying influence on the price of silver. Soon after the purchases began a rise of the price of "foreign" silver occurred from about 93 cents in June, 1920, to 97 cents in August. After that other factors in the situation overcame the steadying influence of the Treasury purchases, so that silver continued to decline, though perhaps not so rapidly as would have been the case had the Treasury not been buying silver.

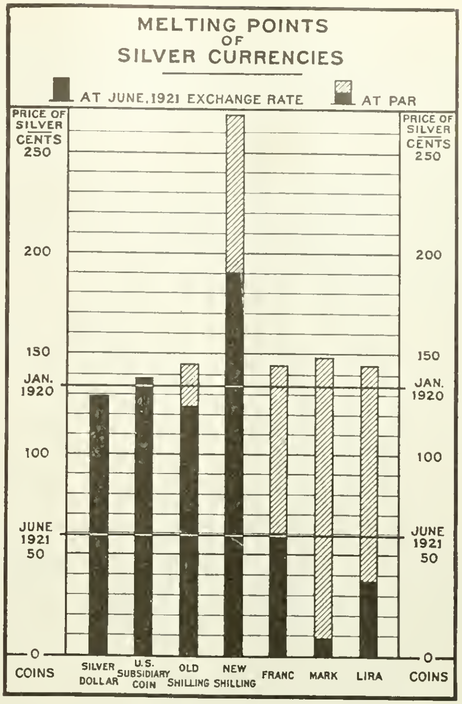
In spite of occasional discrepancies, the two curves clearly show that silver prices are to a very large extent affected by the same economic forces as prices of other goods or commodities. Rising prices of other commodities increase the cost of producing silver and, therefore, tend to raise its price. Furthermore, changes in the general purchasing power of gold affect the price of silver in the western world, where the demand for industrial purposes at times exceeds the government purchases for coinage.

PRODUCTION

From the table below it will be seen that the production of silver, which before the war totaled from 220,000,000 ounces to 226,000,000 ounces yearly, dropped to 211,000,000 ounces in 1914, 179,000,000 ounces in 1915, and 157,000,000 ounces in 1916. In this drop the chief factor was the decline of production in Mexico, which was caused not by the World War but by the unsettled political conditions prevailing in that country. Silver production increased in 1917 to 174,000,000 ounces, and in 1918 to 197,000,000 ounces, but declined again in 1919 to 175,000,000 ounces, and in 1920 to somewhat less than that amount. Production in the United States

*For text of this act, see *Federal Reserve Bulletin* for May, 1918, p. 395.





reached its maximum in 1916, and from that time has steadily declined. This decline is due chiefly to the fact that in the United States silver is produced from different sources approximately in the following proportions: Thirty percent from siliceous silver ores and placer operations; 30 percent from copper ores; 25 percent from lead ores; and 15 percent from complex ores, such as lead, zinc, and copper ores. Less, therefore, than one-third of the silver in the United States is produced as an independent operation, and more than two-thirds is incidental to the production of baser metals. Consequently, the prices of lead, zinc, and copper are important factors in the amount of silver produced in the United States, and the large declines in its production in 1918 and 1919, when the market for copper and lead was weak, are due primarily to this fact. In Canada production is declining, largely because the cobalt fields are being exhausted. Mexican production, which in 1916 had dropped to only 23,000,000 ounces, has since greatly increased because of the return of more normal conditions. In the last two years silver production on the whole has been on a level much below the prewar amount, but higher than in 1916. With conditions in Mexico more settled, there is no reason to expect a decline in her silver production. On the contrary, the amount in 1921 is likely, in spite of the prevailing lower level of prices, to be greater than in 1920, for the cost of production in Mexico has greatly decreased, so that silver can be marketed profitably even at the existing price. Production in the United States, which is assured a steady market at a dollar an ounce, is likely to remain constant at least for the next two or three years.

SILVER PRODUCTION OF THE WORLD BY PRINCIPAL COUNTRIES

(In fine ounces.)

Countries.	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920[1]
United States........	57,137,900	60,399,400	63,766,800	66,801,500	72,455,100	74,961,075	74,414,802	71,740,400	67,810,100	56,682,445	56,564,504
Canada.............	32,869,264	32,740,748	31,625,451	31,524,708	27,300,667	26,625,960	25,459,741	22,221,300	21,284,600	15,675,134	13,000,000
Mexico.............	71,372,194	79,032,440	74,640,300	70,703,828	70,703,828	39,570,151	22,838,385	35,000,000	62,517,000	62,681,987	63,656,100
South America......	17,416,314	14,433,915	13,980,888	13,126,490	12,938,439	13,687,464	11,839,822	15,451,300	15,561,000	14,713,165	15,000,000
Europe.	14,152,061	15,693,366	15,992,082	15,248,216	15,317,155	10,107,556	8,591,029	6,511,900	6,871,700	4,899,618	5,000,000
British India........	44,772	104,323	93,649	....	236,440	284,875	628,656	2,068,700	2,240,500	2,165,606	2,000,000
Australia...........	21,545,828	16,578,421	14,737,944	18,128,577	3,520,274	4,295,755	3,863,418	10,000,000	10,000,000	7,430,770	8,000,000
Japan............	4,646,160	4,459,087	4,932,852	4,649,910	4,649,910	5,120,293	5,120,293	7,111,700	6,600,400	4,800,000	5,000,000
All other............	3,694,869	2,751,223	4,540,688	3,724,614	3,981,564	4,197,371	3,870,375	4,082,500	4,509,600	5,468,689	5,000,000
Total.........	222,879,362	226,192,923	224,310,654	223,907,843	211,103,377	178,850,500	156,626,521	174,187,800	197,394,900	174,517,414	173,220,604

[1] Preliminary.

DEMAND IN EUROPE AND AMERICA

Silver consumption in the arts depends to a considerable extent on its price and on general prosperity. During the war period, and especially during the postwar boom, which was world wide in its scope, an increasing demand for silver in the arts was an element in its rising price. Among the principal industries consuming silver is the moving-picture industry which, because of its striking development, caused an increased demand in the silver market. The demand for silver to be used in the manufacture of ornaments and luxuries, however, experienced a sharp decline, when in June, 1920, the world-wide depression began to be felt.

More important in the recent history of silver prices were the developments in connection with silver coinage. At the outbreak of the war there was a large increase in the demand for silver coins, partly because the general disturbed condition encouraged people to hoard silver, partly because the higher price level necessitated the use of more silver coins as pocket money, but chiefly because the armies, especially those operating in the Near East, were drawing pay in silver and spending silver money of the smaller denominations.

A very interesting development took place when the price of silver began to rise at the same time that the currencies of the various countries became increasingly depreciated. The table below and the chart on page 349 show the silver contents of different silver currencies and the melting points for these currencies, i. e., the price of silver per ounce at which the silver content of the coins is worth as much as their face value. The total bars in the chart indicate how high the price of silver must be before the several currencies will reach the melting point, assuming that the value of these currencies remains at par. The black portions of these bars indicate the points at which the coins would be melted with exchange at the June, 1921, level.

MELTING POINTS OF SILVER CURRENCIES

Coin.	Fine silver content (grains).	Melting point (price of silver per oz.). In local currency.	In U. S. money. At par of exchange.	At June, 1921, rate of exchange.
Dollar	371.25	1.2929 dollars	......	....
Subsidiary silver (dime)	34.722	1.3824 dollars	...	....
Shilling:				
Old	80.7263	5.946 shillings	$1.447	$1.124
New	43.6364	11 shillings	2.677	2.08
5-franc piece	374.22	7.234 francs	1.396	.584
1-franc piece	64.4286	7.45 francs	1.438	.602
Mark	11.16	6.221 marks	1.482	.09
Lira	64.4286	7.45 lire	1.438	.371

It will be seen that with currencies at the June, 1921, level, silver dollars and subsidiary silver are far removed from the danger of the melting pot. The price chart shows, however, that for four months, November, 1919, to February, 1921, the price of silver was above the melting point of silver dollars, though below that of subsidiary silver. British silver is now also far below the melting point. At the January, 1920, price of silver, however, the old shilling was worth less than its silver content; this caused a change in the British coinage act by which the silver content of the shilling was reduced from 81 grains to 44 grains, or from a fineness of 925 per thousand to one of 500 per thousand. The new shilling is far removed from any danger of melting either at par or at the present rate of sterling exchange. Other countries took similar measures to protect their silver coinage, notably Norway, Sweden, and Holland. In France the melting point of the 1-franc piece at the present rate of exchange is very close to the current price of silver, while that of the 5-franc piece is below, so that silver has practically ceased to circulate, some of it being hoarded and much of it sold. This situation has incidentally resulted in the virtual breaking up of the Latin Monetary Union, as France could not afford to have her francs smuggled into Switzerland, where their purchasing power was two or three times as great as at home. France has requested Switzerland to return all French subsidiary coinage, and recently also all the 5-franc pieces. To this end Switzerland has declared this money no longer lawful money within her boundaries. In Germany and Italy the depreciation of the national currencies is so great that silver, at its present price, is far too expensive to circulate in the existing coins. In Germany the silver content of the mark would be worth more than a mark at the present rate of exchange if silver were worth as little as 9 cents per ounce. The German government was obliged to demonetize silver, and the Reichsbank reports its considerable silver holdings not as part of its metal reserve, but included in "all other assets." This silver, amounting to about 30,000,000 ounces, is worth about 1,600,000,000 marks, and the Reichsbank has been reported as negotiating for loans on the security of this silver, or for its sale, as a means of paying some of its foreign obligations. In Italy the melting point of the lira is 37 cents per ounce.

The passing of the melting point for several of the important silver currencies brought from continental Europe into the London market a large supply of silver, which during 1920 is said to have approximated 50,000,000 ounces. Thus the total silver for sale in 1920, in spite of the production of only about 173,000,000 ounces, has been close to a record offering. Unquestionably this stream of silver to the London market from the vaults of central and other banks, as well as from the holdings of individuals, has been an important as well as a very unusual element in the silver situation during the past year.

INDIA

More important factors, however, in the silver situation than any of the developments in the western countries are changes in demand by the two great oriental silver using countries—India and China. On the next page is a table showing the gold and silver imports and exports, as well as the merchandise imports and exports of India, for the fiscal years ending March 31, 1914, to 1921.

It will be seen that the merchandise trade balance of India, which had always been favorable, increased decidedly during the war as the result of the great demand for supplies by the belligerents, and of the inability of European countries to export goods so long as their productive energies were entirely devoted to the war. For the year ending March 31, 1920, this favorable balance was nearly 1,200,000,000 rupees. During the year ending March 31, 1921, however, for the first time in a generation India reported an unfavorable trade balance, amounting to 791,000,000 rupees. This was due to the decrease in the purchasing power of the world during the depression and to the poor crops caused by an unsatisfactory monsoon in that year. In April and May, 1921, also, India reported unfavorable balances, though in May the unfavorable balance was only 20,000,000 rupees, compared with 111,000,000 rupees for the most unfavorable month (November, 1920), and 69,000,000 rupees, the monthly average since June, 1920.

It will be seen from the table that the excess of silver imports over exports into India was enormous during the war years, reaching its maximum in the fiscal year 1919, when 237,000,000 ounces were imported. A large part of this silver came from the United States in accordance with the provisions of the Pittman Act, which authorized the United States Treasury to sell to the British government not to exceed 350,000,000 ounces of silver at $1 an ounce. At that time the silver reserves of India were very low; the Indian population was restive, so that it was imperative for the government to obtain silver in order to convince the population that the rupee was convertible. In the summer of 1919 the Indian demand for silver ceased, and in the fiscal year 1920 only 97,000,000 ounces and in the fiscal year 1921 only 22,000,000 ounces of silver (net) were imported into India. During recent months, however, there has been a new movement of silver to India estimated at about 35,000,000 ounces for the first half of the present year. The reason for this is said to be the political unrest which generally results in the hoarding of hard cash by the Indian population. At present the political horizon seems to have cleared somewhat and the silver movement is expected soon to discontinue. On the other hand, gold has been sent from India to Japan and to the United States, as a result of the unfavorable exchange value of the rupee.

The outstanding facts about India in connection with the study of silver in recent years are her insatiable demand for silver until the summer of 1919, followed by her almost complete withdrawal from the silver market during 1919-20.

GOLD, SILVER, AND MERCHANDISE IMPORTS INTO AND EXPORTS FROM INDIA

Fiscal year ended Mar. 31.	(In thousands of standard ounces.)							(In thousands of rupees.)			
	Gold.				Silver.			Merchandise.			
	Imports.	Exports.	Excess imports.	Excess exports.	Imports.	Exports.	Excess imports.	Imports.	Exports	Excess imports.	Excess exports.
1914	4,593	844	3,749	....	79,835	8,728	71,107	1,832,479	2,488,788	....	656,309
1915	1,705	527	1,178	....	64,160	8,394	55,766	1,379,290	1,815,917	....	436,627
1916	833	1,094	....	261	39,833	6,901	32,932	1,319,862	1,925,343	....	605,481
1917	2,283	18	2,265	....	116,959	24,765	92,194	1,496,220	2,331,536	....	835,316
1918	....	....	....	....	88,814	14,283	74,531	1,498,850	2,222,651	....	723,801
1919	390	1,346	....	956	241,748	4,719	237,029	1,690,341	2,538,814	....	848,473
1920	7,830	2,223	5,607	....	101,052	4,110	96,942	2,079,724	3,267,931	....	1,188,207
1921	3,728	2,907	821	....	42,550	20,982	21,568	3,355,072	2,563,591	791,481	....

CHINA

The other important factor is China. The table below shows that the Chinese trade balance, which is generally unfavorable, was much less so during the war years than before or since, owing to the same causes that influenced the Indian trade balance. In addition to this it will be noted that China was losing gold until 1916 and silver until 1918. The gold went largely to Japan and the silver largely to India.

By the middle of 1919 China found herself extremely short of silver as a result of the war-time drain and of the hoarding due to the unsettled times, while the lack of confidence in bank notes also increased the demand for silver. Consequently, it was China that caused such an insistent demand for silver in 1919, heightened perhaps by speculators, as to drive the price to its peak in January, 1920. By that time her demand was fairly well satisfied; the trade balance, as may be seen from the table, became much more unfavorable, rising from 16,000,000 Haikwan taels to 221,000,000 Haikwan taels, and China was no longer in the market for silver. Recently hard times and famine conditions have resulted in considerable amounts of silver being taken from buried hoards to be used in the purchase of food. It was this withdrawal of China from the silver market that precipitated the final drop in the price of silver, which in March, 1921, was worth about 57 cents an ounce compared with $1.34 at the peak. Since that time the demand from India mentioned above has caused a slight reaction in the silver price.

GOLD, SILVER, AND MERCHANDISE IMPORTS INTO AND EXPORTS FROM CHINA

(In thousands of haikwan taels.)

Calendar year ended Dec. 31.	Gold.				Silver.				Merchandise.		
	Imports.	Exports.	Excess imports.	Excess exports.	Imports.	Exports.	Excess imports.	Excess exports.	Imports.	Exports.	Excess imports.
1913	3,065	4,451	....	1,386	55,711	19,743	35,968	....	570,163	403,306	166,857
1914	861	13,862	....	13,001	16,499	30,122	....	13,623	569,241	356,226	213,015
1915	819	18,211	....	17,392	20,718	39,100	....	18,382	454,476	418,861	35,615
1916	19,903	8,102	11,801	....	37,088	65,766	....	28,678	516,407	481,797	34,610
1917	13,872	5,025	8,847	....	27,507	48,490	....	20,983	549,519	462,932	86,587
1918	1,229	2,282	....	1,053	36,124	12,629	23,495	....	554,893	485,883	69,010
1919	51,079	9,897	41,182	....	62,094	8,969	53,125	....	646,998	630,809	16,189
1920	50,967	68,469	....	17,502	126,354	33,715	92,639	....	762,250	541,631	220,619

NEARLY TWO BILLION DOLLARS INVESTED IN BITUMINOUS MINING

LARGE INCREASES in the number of enterprises and employes, in salaries, value of production and expenses of operation are shown in the U. S. Census Bureau's summary of the bituminous coal industry for 1919. The summary, which was issued last month, makes comparisons of conditions as they existed in 1909.

The summary covers mining of all kinds of coal except Pennsylvania anthracite. The word "enterprise" as used in the summary may mean more than one mine, provided they are operated by a single company and located in the same state or producing district. The number of mines reported is the number of individual mines or closely related groups of mines operated as a unit. The summary does not take into account the small coal mines producing for local consumption only which are situated all over the country.

The Census Bureau's summary follows:

BITUMINOUS COAL STATISTICS, 1909 TO 1919

	Producing enterprises 1909	1919	Percent increase
Number of enterprises	3,506	6.634	89.2
Number of mines	6,016	8.314	38.2
Persons engaged	534.814	583,155	9.0
Proprietors and firm members..	3,739	4,237	13.3
Number performing manual labor in or about the mines	1.713	1.838	7.3
Salaried Employes	19.159	33.562	75.2
Wage earners (average number)	511,916	545,356	6.5
Wage earners, Dec. 15, total......	570.030	616,947	8.2
Above ground	94,173	108.685	15.4
Below ground	475,857	508.262	6.8
Power used (borse power).......	1,228,026	2,154.517	75.4
Capital	$1,062,411,843	$1,903,652,355	79.2
Principal expenses:			
Salaries	21,811,710	68,644,930	214.7
Wages	294,344,241	681,937,911	131.7
Contract work	2,209,672	2,855,966	29.2
Supplies and materials	40,530,631	142,308,281	251.1
Fuel and power	7,513,894	37,155,089	394.5
Royalties and rents	12.093,442	22.242,440	63.9
Taxes	4,485,840	34.571,558	670.7
Products, total value*...........	469,466,096	1.144.656.425	142.8
Coal—			
Quantity (tons, 2,000 pounds)	376.952.543	459.971.070	22.0
Value at mine	$401,555,972	$1,143,001,507	184.6

*Includes $1,654,918, received for by-products work done, and power and miscellaneous materials sold.

COAL PRODUCTION CONTINUES TO SHOW DECLINE

THE OUTPUT OF BITUMINOUS showed an additional decline during the first week in August. The estimated total was 7,296,000 net tons, or 56,000 tons less than that of the last week in July. During the first week in August of 1918, production amounted to 12,130,000 tons and during the corresponding period of last year the total was 10,432,000 tons.

The daily rate of production at the beginning of August was less than that even of pre-war years, in some of which business depression was marked. This rate during the first week was 1,216,000 tons daily, which was only 76 percent of the August 1913 rate, 84 percent of the 1914 rate and 83 percent of the 1915 rate. The marked decrease as compared with 1914 and 1915 production becomes all the more significant when it is remembered that business was generally depressed during 1914 and 1915.

Production for the first 184 working days for five years is shown (in tons) in the following table:

1917	327,477,000	1919	264,311,000
1918	347,635,000	1920	308,994,000
1921	233,977,000		

Upon these figures the U. S. Geological Survey makes the comment that "in point of production of soft coal the year 1921 is, in round numbers, 30,000,000 tons behind 1919, 75,000,000 tons behind 1920 and about 103,000,000 tons behind the average of the war years. Compared with the average of all four years, it is 78,000,000 tons behind."

Labor troubles were a factor in decreased anthracite production during the first week of August. Total output, including mine fuel and local sales, is estimated at 1,564,000 net tons, or 15 percent less than that of the week ending July 23, which was the last preceding week unaffected by labor disputes. Production of anthracite during July, and cumulative production for the first seven months, during the last nine years, are shown below:

ANTHRACITE PRODUCTION

Year	*July Production (Net tons)*	*Cumulative Production to July 31 (Net tons)*
1913	7,272,000	53,500,000
1914	7,165,000	50,900,000
1915	6,691,000	49,100,000
1916	7,062,000	50,500,000
1917*	8,684,000	57,300,000
1918*	9,134,000	59,200,000
1919	7,974,000	47,900,000
1920	8,247,000	52,400,000
1921	7,050,000	52,500,000

*Years of very large washery production.

ASIATIC COAL IMPORTED.—Reports of the first shipment of Manchurian coal to the United States have reached the Commerce Department. Consisting of 7,820 long tons of best screened coal, the shipment, made by Suzuki & Co., Kobe, Japan, was invoiced at over $9.00 per long ton. It has been stated that the total quantity to be included in the shipment, purchased by a San Francisco coal company, will be 14,000 tons. The department's source of information states that it has not been found practicable to ascertain the total stock of coal available for purchase in Manchuria, though the amount is considerable.

ANTHRACITE SHIPMENTS.—Shipments of anthracite in July, as reported by the Anthracite Bureau of Information, aggregated 5,462,760 gross tons as compared with 6,031,937 tons in June and with 6,389,100 tons in July, 1920. The decrease was attributed to continued slack demand for pea and steam sizes, which necessitated closing down many individual operations, and to strikes affecting chiefly the Lehigh and Wyoming regions.

GREAT EXPANSION IN ALL LINES OF OIL AND GAS BUSINESS

GROWTH ALONG ALL LINES characterized the petroleum and natural gas industry in the United States during the ten-year period ending in 1919, as shown by the U. S. Census Bureau. The report summarizes conditions in 1919 and makes comparison with 1909. It shows among other things that during the decade considered the number of productive wells increased more than 50 percent, the number of persons employed was more than doubled and that the number of wage earners increased 150 percent, and capital invested more than 250 percent. The output of petroleum and natural gas was more than doubled and both operating expenses and value of production increased five-fold.

The Census Bureau's summary is shown below.

Petroleum and Natural Gas Summary, 1909-1919

	Producing enterprises 1909	*1919*	*Percent. increase or decrease*
Number of enterprises	7,793	9,814	25.9
Number of petroleum and natural-gas wells	166,320	260,673	56.7
Number of natural-gas-gasoline plants	(2)	1,118	...
Persons engaged	59,085	125,077	111.7
Proprietors and firm members	16,213	14,223	—12.3
Number performing manual labor	2,155	1,989	—7.7
Salaried employes	6,128	17,649	188.0
Wage earners (average number)	36,744	93,205	153.7
Power used (horse power)	1,221,969	1,821,367	49.1
Capital	$683,268,497	$2,421,485,942	254.4
Principal expenses—			
Salaries	7,241,881	33,468,368	362.2
Wages	27,091,650	134,520,747	396.5
Contract work	16,736,510	68,663,659	310.3
Supplies and materials†	49,835,890	223,872,364	349.2
Fuel and power	1,444,595	20,767,040	1337.6
Royalties and rents	21,282,820	106,458,518	400.2
Taxes	2,576,986	38,690,629	1401.4
Products, total value‡	185,416,684	1,001,316,060	440.2
Petroleum—			
Barrels (42 gals.)	171,559,394	360,016,400	109.8
Value at well	$117,696,529	$694,107,577	489.7
Natural gas—			
M. cu. ft.	559,800,490	1,276,152,627	118.2
Value at well	$67,605,397	$155,847,905	130.5
Natural-gas gasoline—			
Gallons	(*)	453,949,852	.....
Value at plant	(*)	78,752,824	.....

A minus sign (—) denotes decrease.
*Not available.
†Includes gas purchased for use as material and for resale.
‡Includes value of minor products and amount received for work done and power sold.

GASOLINE QUALITY HIGHER DESPITE PRICE INCREASES

BETTER GASOLINE is being sold this summer than was distributed last summer, despite lower prices. This fact has been ascertained by the U. S. Bureau of Mines, which conducts semi-annual surveys of motor gasoline sold throughout the country.

Samples of gasoline collected in New York and Pittsburgh have shown almost without exception that motor fluid is more volatile than that sold in the same cities a year ago. The same situation was found to be true in Washington, D. C. The average boiling point of gasoline sold in New York this year has been found to be 268, or 4 less than last year, and that of Pittsburgh 259, or 16 less than last year. The fourth semi-annual gasoline survey covering all of the large cities of the United States is now nearing completion, and reports will be issued within a few weeks.

ARKANSAS "ARRIVES" AS PETROLEUM PRODUCING STATE

NO TIME WAS LOST by the State of Arkansas in taking high rank as an oil producer. Within four months after it began to be recognized as a regular producer it gained seventh rank among the states. Official statistics for June, compiled by the U. S. Geological Survey, gave the state a higher rating than Illinois and one next to Wyoming.

Production by states was as follows:

Petroleum Production, June, 1921

	Barrels		*Barrels*
California	10,120,000	Ohio	654,000
Oklahoma	9,736,000	West Virginia	633,000
Texas	8,296,000	Pennsylvania	615,000
Kansas	3,480,000	Montana	114,000
Louisiana	2,277,000	Indiana	105,000
Wyoming	1,857,000	New York	78,000
Arkansas	880,000	Colorado	9,000
Illinois	815,000	Tennessee	1,000
Kentucky	735,000		
		Total	40,405,000

The first decrease in production since January was reported in June, the daily average output being 9,373 barrels less than that of May. Although the month's production was 3,000,000 barrels greater than that of June, 1920, its value was only $52,900,000, or considerably less than half that of June, 1920, which aggregated $116,200,000.

Production during the first half of 1921 totalled 236,675,000 barrels, or at the rate of 473,000,000 barrels per year, as compared with an output of 211,360,000 during the first half of 1921. Comparative statistics for the first six months of 1920 and 1921 follow:

Petroleum Statistics, First Six Months

	Barrels 1920	1921
Production	211,360,000	236,675,000
Imports	39,009,000	66,276,000
Withdrawn from storage	868,000	
Total	251,237,000	302,951,000
Consumption	247,222,000	259,721,000
Exports	4,015,000	4,427,000
Added to stocks		38,803,000
Total	251,237,000	302,951,000

GASOLINE ACCUMULATION ARRESTED

REFINERY STOCKS of gasoline, which on May 31 were the largest on record, were reduced during the month of June by 47,827,771 gallons. Stocks at the end of May amounted to 800,495,787 gallons; at the end of June to 752,668,016 gallons. California, with an increase of 5,752,429 gallons, and Colorado-Wyoming, with 2,042,999, were the only divisions reporting an increase in stocks during the month. The largest decreases were in Texas-Louisiana, 20,360,768 gallons, and Indiana-Illinois, 18,223,271 gallons.

OIL SHALE RESOURCES CONSTITUTE TREMENDOUS RESERVE

IF THE AMERICAN petroleum supply ever falls short of the domestic demand, and foreign oils cannot be obtained in sufficient quantities at reasonable prices, we can depend upon our oil shales to meet the emergency. This is the studied conclusion of the United States Bureau of Mines.

An analysis of the oil shale situation, particularly from the economic angle, has been made by M. J. Gavin, H. H. Hill and W. E. Perdew, of the Bureau of Mines. They give special consideration to the western states, where shale beds are thickest and richest. They agree with prior findings of the Geological Survey that these states contain enormous quantities of shales which can be made to yield hydrocarbon oils to a much greater extent than we can hope to obtain from our oil wells, and that the shales thus constitute a tremendous potential reserve.

It is estimated by the U. S. Geological Survey that the curve of crude oil production will reach its peak within a few years, and then the country will have to look more and more to other sources for its hydrocarbon oils.

MINES TO BENEFIT FROM BEAR RIVER DEVELOPMENT

ADDITIONAL POWER for mining purposes will be provided by the development of the Utah Power and Light Company on Bear River in Southeastern Idaho, a preliminary permit for which has been issued by the Federal Power Commission. The project will impound water for both irrigation and power, and will complete the utilization of the Bear River for power purposes at all practicable points from Bear Lake to Great Salt Lake. The development will make the river one of the most completely utilized streams for power and irrigation purposes in the west.

The completed project will add 21,500 horsepower of hydroelectric energy to the generating capacity of the company's system, now capable of developing about 165,000 horsepower, and will be connected with the big main transmission system now operating at 130,000 volts, extending from Grace plant, in Idaho, to Salt Lake City, a distance of 134 miles, and supplying a population of 300,000 with power, much of which is used in mining and manufacturing. This additional development will give added reliability in power supply and will serve to steady some of the company's smaller plants located on other streams having variable flow.

MINTS SPEED UP SILVER OUTPUT

PRODUCTION of silver dollars by the Philadelphia mint during August was expected to be at a greater rate than during the month of July. During both June and July, production slowed down considerably, from the record of 200,000 per day in May, but during the first week of last month the previous record was regained. The July output was 2,450,000 pieces. On the first of July about 15,000,000 silver dollars were stored in the Philadelphia mint vaults.

FUEL ECONOMIES TO FOLLOW FROM CERAMIC STUDIES

DEVELOPMENTS of interest to fuel consumers and producers alike are expected to result from investigations now under way at the Bureau of Mines' ceramic station at Columbus, Ohio. Studies are to be carried further than ever before in the relation of fuel to the ceramic industry and experts of the coal division of the Bureau are to be called into the investigations for the purpose of adding their knowledge to that of the station's ceramic chemists. While the information on fuel conservation that will be obtained will be directly applied to the ceramic industry it is expected that it will be applicable in a much larger field. The studies will not be confined to coal conservation but will also include means of effecting economies in the use of fuel oil and gas, the other fuels used in commercial ceramics.

Under the co-operative agreement between the ceramic industry, an extensive investigation will be made of various types of kilns now in use. Several plants will be visited and the data obtained will be used as a basis for laboratory practice at the Columbus station. Members of the industry have been evidencing keen interest and a large number of requests have already reached the Bureau proposing investigation of plants and their systems. Ceramic operators have already agreed to make any changes in their plants that may be suggested by the Bureau as a result of its work.

In addition to the activities that will be devoted to securing economies in fuel consumption, the Bureau's chemists will soon enter into an exhaustive series of experiments having as their aims the discovery of various combinations of elements for the purpose of securing distinctive and new results in the production of ceramic material. Much the same methods of research will be used as those which guided chemists of the glass industry in obtaining highly desired glazes and other objects.

PROTECTING MINE TIMBERS FROM DECAY

CO-OPERATION between the Bureau of Mines and the Forest Products Division of the Department of Agriculture on investigations for improving protection of mine timbers from decay has reached the point where the bulk of the field work has been concluded. The task of preparing reports will soon be initiated. R. R. Horner, the Bureau's engineer who has been working with representatives of the Department of Agriculture, has returned to Washington, following a long tour through the western mining districts, and is at work on the data which he collected. The depression which has beset the mining industry has forced the necessity of preservation of mine timbers before the attention of operators. Producers are showing high interest in the government's investigations at this time in connection with their efforts to minimize overhead expenses involved in keeping their mines in condition until such time as the economic situation shall enable them to re-open their properties for production. Experiments are being carried on at the Agricultural Department's Wood Products Laboratory, Madison, Wisconsin, and the Bureau of Mines is completing the task by adapting the findings to mining conditions.



THREE FRAMERS OF 1921 TAX PROGRAM

Left to right—Congressman Charles B. Timberlake, of Colorado, member of Ways and Means Committee; Congressman Martin B. Madden, of Illinois, chairman of Appropriations Committee, and Thomas A. Chandler, of Oklahoma, member of Ways and Means Committee. They took an important part in the conferences in which the Administration tax program was developed.

ANALYSIS OF THE REVENUE BILL OF 1921

THE NEW TAX REVISION BILL amending the Revenue Act of 1918, and known as the Revenue Act of 1921, was introduced in the House of Representatives on August 15 by Chairman Fordney of the Ways and Means Committee. The bill was passed by the House on August 20 and referred to the Senate, and is now being considered by the Senate Finance Committee. It will be taken up by the Senate after the recess, and may be amended in many respects before its final passage. The revenue Act of 1918 will remain in effect except such provisions as are changed by the new act when it is signed by President Harding. The following is a summary by sections of the provisions of the bill as it passed the House:

201. **Foreign traders and foreign trade corporations,** as defined will be taxed substantially as non-residents, i. e., only on income derived from sources within the United States. (See Secs. 212, 223.)

202. **Dividends:** Stock dividends are specifically exempted from taxation in accordance with the decision of the Supreme Court in Eisner v. Macomber (252 U. S., 189), but "a distribution made by a corporation to its shareholders shall be included in the gross income of the distributees as for the date when the cash or other property is unqualifiedly made subject to their demands."

203. **Basis for determining gain or loss:**

Gifts: If a gift is disposed of by the donee the basis is the same as it would have been in the hands of the last preceding owner by whom the property was not acquired by gift.

Other property: The general basis in the case of a sale or other disposition of property shall be the cost of such property; but in the case of property acquired prior to March 1, 1913 (if its fair market value as of that date is in excess of cost, the gain is the excess of the price received over such fair market value; (2) if such fair market value is lower than cost, the loss is the excess of such fair market value over the amount received; and (if the price received is more than cost but less such fair market value, or less than cost but more than such fair market value, no gain or loss is recognized. This is the same rule approved by the Supreme Court in Merchants' Loan & Trust Co. v. Smietanka (decided March 28, 1921).

Exchanges: Where property is exchanged for other property there is no gain or loss unless the property received in exchange has a readily realizable market value; but there is no gain or loss even then (1) if the property given was held for investment or productive use, and that received was of a like kind or for a like use; (2) when in an organization or reorganization of a corporation, new stock or securities are received for property owned; (3) when a person or group transfer property to a corporation and immediately thereafter are in control of such corporation, such control being defined as the ownership of 80 percent of the voting and all other classes of stock.

Deductions for losses, such as depreciation, depletion, obsolescence, are on the same basis as that used for determining gain or loss.

204. **Net losses:** A net loss for a taxable year beginning after December 31, 1920, is deductible from the income of the first succeeding taxable year, and any balance of such net loss is deductible from the income of the second succeeding year. This provision is similar to the existing law applicable to net losses for 1919.

205. **Fiscal year basis:** If a taxpayer makes return for a fiscal year beginning in 1920 and ending in 1921, 1920 rates will apply to 1920 portion and 1921 rates to 1921 portion of the period.

206. **Capital gain and capital loss:** Where the sum of the net gain derived from the sale or other disposition of capital assets and ordinary net income together exceed $29,000, the normal rates of tax shall apply to the ordinary net income and the total tax shall be this amount plus 12½ percent of the capital net gain or minus 12½ percent of the capital net loss, in the case of a loss. Ordinary net income is the net income after excluding all items of capital gain, capital loss and capital deductions.

207. **Surtax:** The maximum rate of surtax upon the amount which the net income exceeds $66,000 for the calendar year 1922, and thereafter, shall be 32 percent.

208. **Gross income:** Includes gains, profits, and income derived from salaries, wages, compensation, interest, rents, dividends, securities, or from any source whatever. Income received by any community shall be included in the gross income of the spouse having the management and control of the community property.

209. **Exempt income:** The proceeds of life insurance policies paid upon the death of the insured.

210. **Tax-free securities:** Requirement that every taxpayer must make a return of his tax-free securities and interest received therefrom is repealed.

211. **Exempt income:** New exemptions are (1) earnings of a non-resident

alien or foreign corporation derived from the operation of ships documented under the laws of a foreign country which grants an equivalent exemption to citizens of the United States and to domestic corporations; (2) allotments and allowances or compensation received under the War Risk or Vocational Rehabilitation Acts; (3) compensation of the President and Federal judges; (4) interest or dividends received from domestic building and loan associations, operated exclusively for the purpose of making loans to members, not exceeding $500.

212. **Non-residents:** In the case of a non-resident alien individual or foreign trader, gross income means only gross income from sources within the United States.

213. **Miscellaneous deductions:** (1) Traveling expenses, including expenses for meals and lodging while away from home on business; (2) all interest on indebtedness except on indebtedness incurred or continued to hold tax-securities; (3) taxes, except federal income, war-profits, or excess-profits taxes, and taxes assessed against certain local benefits.

214. **Deductions for losses and bad debts:** No deduction shall be allowed for losses sustained in the sale of securities where the taxpayer at or about the same time acquires identical property. The Commissioner is authorized to permit a deduction for bad debts recoverable only in part, or in his discretion to recognize a reserve for bad debts.

215. Slight substitution of words.

216. **Deductions for contributions and gifts:** Extended, under certain restrictions, to include a community chest, fund, or foundation.

217. **Deduction in case of involuntary conversion:** Gain resulting from involuntary conversion of property into cash as a result of fire, shipwreck, condemnation or related causes, is deductible, when taxpayer immediately proceeds to replace to invest the proceeds of such conversion in the acquisition of similar property or replacement fund.

218. Deductions in the case of nonresident aliens and foreign traders allowed only to extent that they are connected with income from sources within the United States; and proper apportionment and allocation of deductions shall be determined under rules prescribed by the Commissioner.

219. No deduction is allowable for shrinkage in a terminable interest in property acquired by gift, bequest, devise, or inheritance, due to lapse of time, or for items not allowable under state laws in computing net income on an estate or trust.

220. **Corporation exemption:** The amount of dividends included in the gross income.

221. **Personal exemptions:** Single persons, $1,000; married persons or heads of families $2,500, where the net income does not exceed $5,000, in which case the exemption is $2,000; and $400 credit for each dependent; non-resident alien individuals $1,000.

222. **Credits:** Determined by status of taxpayer on last day of the taxable year, except in case of death, such credits shall be determined by status at time of death.

223. **Non-resident alien individuals and foreign traders:** Sources of gross income, interest, dividends, compensation for services, rentals and royalties, and income from natural resources or sale of real or personal property—within or without the United States, are explicitly allocated.

224. **Personal service corporations:** This classification is repealed and such corporations are made subject to the normal corporation tax (see sections 233 and 1008). Rule for computing tax where such corporation has a fiscal year basis beginning in 1921 and ending 1922 specified.

225. **Income of estates or trusts:** Amendment follows construction of existing law given uniformly by the Treasury Department.

226. **Corporations formed to evade surtax** upon its stockholders required to pay a flat additional income tax of 25 percent; but stockholders may agree to be taxed upon their distributive shares in lieu of all income taxes upon the corporation.

227. Administrative changes in the withholding provisions of existing law.

228. **Credit for foreign taxes:** In no case shall the amount of credit allowed for any income or profits taxes paid to any foreign country exceed the same proportion of the domestic tax which the taxpayer's net income from sources within the United States bear to his entire net income.

229. Such credits allowed only if taxpayer furnishes satisfactory evidence showing the amount of income derived from sources without the United States.

230. Credit for foreign taxes in the case of fiscal year returns shall be determined under the provisions of this act.

231. **Returns of individuals:** Every single individual whose net income is $1,000 or over, every married individual whose net income is $2,000 or over, shall make return. A husband and wife may make a single joint return and have the tax computed on the combined income.

232. In the case of a return for a period of less than one year the net income shall be placed on an annual basis and the surtax computed according to the number of months in such period.

233. **Corporation income tax:** The rate of income tax for 1922 and thereafter is increased from 10 to 12½ percent.

234. **Fraternal societies and building and loan associations:** Provision that fraternal societies operating under the lodge system to be exempt must also provide for payment of life or other benefits is repealed. Exemption to domestic building and loan associations is limited to those operated exclusively for the purpose of making loans to members.

235-236. **Exempt corporations, etc.:** Those operated for religious, scientific, etc., where no part of the net income inures to the benefit of any private individual, and associations organized and operated as sales or purchasing agents for members, and turning back proceeds or purchases, less necessary expenses.

237. Classification "personal service corporations" under organizations exempt from tax is repealed.

238. **Corporation gross income** is computed in substantially the same manner as that of individuals (see sections 213 and 217 for changes in existing law).

239-244. **Deductions of corporations** are amended along similar lines to the amendments relating to the deductions of individuals. (See sections 213 to 218 inclusive). Sections 241 and 242 amend provisions relating to deductions of insurance companies.

245. **Payment of tax at source:** In case of foreign corporations the rate is changed to 12½ percent.

246-247. **Credits of corporations:** Credit for foreign taxes similar to the provision for individuals (see sections 228 and 229).

248. **Consolidated returns:** Made optional with corporations concerned, except that when election is made it must be adhered to thereafter unless permission to change basis is granted.

249. The commissioner is given power to consolidate the accounts of two or more related trades or businesses for the purpose of making an accurate apportionment of gains, profits, income, deductions, or capital.

250. **Life insurance companies** are to be taxed at the normal corporation rate on the basis of investment income from interest, dividends, and rents, less the lawful deductions.

251-254. **Assessment and appeal:** Rate of interest on delinquent taxes fixed at 6 percent per annum instead of 1 percent per month. Assessment of tax must be made within three years after a return is filed under this act, and within five years under prior acts. No suit

SUMMARY OF TAX CHANGES

Following is a recapitulation of the principal changes in rates contained in the new bill, with estimated annual gains and losses such changes will occasion. (Rates not fully in force until calendar year 1923.)

	Loss	Gain
Repeal of excess profits	$450,000,000	....
Increase of corporation income tax to 12½ percent*	....	$133,750,000
Reduction of surtax rates to 32 percent maximum*	90,000,000	....
Increased exemption of heads of families to 2,500 for income not in excess of $5,000	40,000,000	....
Additional exemption for dependents increased to $400 each	30,000,000	....
Repeal of transportation taxes*	262,000,000	....
Repeal of taxes on life insurance	6,300,000	....
Repeal of taxes on Fire, Marine and Inland insurance	6,860,000	....
Repeal of tax on beverages	60,000,000	....
Tax of 4 cents on cereal beverages	....	18,000,000
Tax of 5 cents on carbonic acid gas	....	2,000,000
Tax of 2 cents a gallon on fruit juices of soft drinks Tax of 3 cents a gallon on still drinks (not mineral water or table water) Tax of 10 cents a gallon on fountain syrups	....	12,000,000
Repeal of tax on proprietary medicines goods	2,500,000	....
Repeal of tax on toilet soaps and powder	2,200,000	....
Repeal of tax on motor boats, yachts, etc.	100,000	....
Reduction of tax on candy to 3 percent	8,000,000	....
Repeal of tax on electric fans	280,000	....
Reduction of tax on fur articles to 5 percent	4,510,000	....
Repeal of tax on so-called luxuries, clothing, etc.	15,000,000	....
Repeal of tax on proprietary medicines	6,000,000	....
Total	$983,750,000	$165,750,000
Net loss	818,000,000	....

*Effective January 1, 1922.

shall be brought for collection of any tax due after five years from the date return is filed. Taxpayer is given thirty days from date of notice of a deficiency in tax to file an appeal, and amount then determined to be due shall be assessed and unpaid, and no claim for abatement in such a case shall be entertained. The commissioner may waive certain requirements in the case of a citizen about to depart from the United States.

255. **Refunds**: An excess payment of income tax under the Act of 1917, where the invested capital of a taxpayer is decreased by the commissioner on account of failure of the taxpayer to take adequate deductions in previous years, shall be credited or refunded without the filing of a claim therefor.

301. **Excess profits tax**: Repealed as of January 1, 1922.

401-404. **Estate tax**: Provisions relating to the interest in property held jointly or as tenants is entirely by the decedent and any other person clarified and liberalized. Where a deduction is made for property which has been subject to the tax within five years, the value placed on such property in determining the value of the gross estate of the prior decedent, and not the value at date of death of the last decedent, shall be the basis for such deduction. Provisions relating to non-residents and foreign missionaries are modified. It is also provided that an executor, by filing a written application, may obtain discharge from personal liability for any estate tax not assessed within one year from date of application for determination of such tax.

501. **Transportation tax** on freight, passenger and express traffic repealed as of January 1, 1922.

Provision made for refund of taxes on unused portions of tickets or mileage books.

601-604. **Beverage tax amendments**: The 10 percent. manufacturer's tax on carbonated beverages and the 15 percent tax on cereal beverages is repealed, and taxes of 5 cents per pound on carbonic acid gas, and 10 cents per gallon on sirups, 2 cents per gallon on fruit juices, 3 cents per gallon on still drinks, and 4 cents per gallon on cereal beverages, are proposed.

701-705. **Admissions and dues**: Provision of existing law relating to admissions free or at reduced rates is repealed. Exemption from tax is made in the case of admissions to benefit performances and exhibitions and fairs conducted exclusively for the benefit of needy persons formerly in the military or naval service, and admissions to agricultural fairs, under certain restrictions.

801-813. **Excise tax amendments**. (See summary.)

901. **Capital stock tax**: Time within which assessment of tax can be made limited to 15 months. Credit or refund of excess payments allowed.

1001-1005. **Miscellaneous administrative provisions**: An agreement between the commissioner and a taxpayer fixing final tax liability, is provided for. A reversal of any treasury decision by a subsequent decision, unless occasioned by a court decision, may be applied without retroactive effect. No taxpayer shall be subjected to unnecessary examinations or investigations. Authority is given for the creation of a "tax simplification board" to bring about a simplification of the forms and procedure used by the revenue bureau.

1006. **Preferred claim**: Debts due the United States shall be preferred claims in the case of insolvency, receivership, or bankruptcy.

1007. **Consolidated returns**: Taxes, under revenue act of 1917, in the case of partnerships or corporations affiliated during 1917, imposed on basis of consolidated returns of net income and invested capital.

1008. **Personal service corporations**. If the Supreme Court decides that such corporations cannot be taxed as partnerships under the revenue act of 1918, the tax then assessable for the years 1918, 1919 and 1920 will be a tax equal to the taxes imposed on regular corporations for those years. Credit against the tax due from the corporation for taxes paid by any shareholder must be applied for in writing within 90 days from date of such court decision. Provision is made for credit or refund where the aggregate tax paid is greater than the corporation tax would have been.

1009. Liberty Bond act amended so as to increase the aggregate amount of Victory Liberty notes from $7,000,000,000 to $7,500,000,000.

1010. **Liberty Bond exemptions**: Provision is made for a blanket exemption from surtaxes and profit taxes of an aggregate principal amount of $125,000 of 4's or 4½'s for first two years after the termination of war with Germany, and of $50,000 for three years more.

1011. Act of 1918 as in force prior to passage of this act will apply to assessment and collection of all taxes accruing thereunder.

1012. Except as otherwise specified, this act will take effect upon its passage.

BUREAU OF MINES EFFECTS SAVING

DESPITE the operation for several years of a system which has reduced waste to a minimum, the United States Bureau of Mines has found it possible to reduce its expenditures for the current fiscal year by $26,000. The reduction has been effected through revisions of the Bureau's system of carrying on technical investigations. The general program of work will remain unchanged, and no single station will be affected more than any other. For several years the Bureau has transferred equipment from station to station instead of allowing it to remain idle or permitting it to be sold at a loss.

QUARRY ACCIDENTS, 1920

ACCIDENTS at sandstone and bluestone quarries in 1920 resulted in the injury of 356 men and the death of 2. The quarries employed 4,466 men, representing an increase of 23 percent in the number of workmen. The accident rates for the year were .56 killed and 100.54 injured per thousand employes, as compared with .76 killed and 131.96 injured in 1919.

Accidents at quarries producing cement rock in 1920 resulted in the injury of 2,585 men and the death of 39. The rate per thousand was 2.75 killed and 182,49 injured, as compared with 2.66 killed and 231.58 injured in 1919. The total number of men employed was 13,251, an increase of 40 percent over 1919.

THINKS SOLOMON IS RUNNING THE BUREAU OF MINES

"OUT IN THE PROVINCES," as acute Washingtonians sometimes term those regions in which the votes are cast, people place no limit upon the things which they believe Uncle Sam can accomplish for them. Examples galore of the extreme ability which folks in the suburbs of the nation believe the government to possess in its immediate relations with them are found in letters reaching the various governmental bureaus in Washington.

Two letters recently broke into the comparatively uneventful business existence of a correspondence clerk in the Bureau of Mines to illustrate this very thing. One of these missives bore the postmark of a little western mining town. The letter was written in a draggy, uncertain scrawl, with a name of plainly foreign origin tacked on the end at a rakish angle. The writer sought information, lots of it. Leading off with a simple query as to when the bureau's 1921 reports on everything from silk neckties to onyx cameos would be ready, he stepped into a veritable flood of question marks.

"Could you drop me a line when some expedition starts off to the Cocos Islands or any other place?" he asks with nonchalance.

"What is radium worth a pound?"

"Where are the most birds of paradise found, and how big are their eggs?"

"Can you give me the names of all the foreign and domestic companies handling eyeglasses, telegraph instruments, water gages, periscopes, ore finders, hearing horns, electrical churns, curling irons and aluminum cooking tools?"

And so on and on through three pages.

The other gem par excellence which the mail man brought told of the ambitions of an Italian mushroom grower of New York City. It told such a tale as might as easily have furnished O. Henry with inspiration for one of his wonder yarns of the great metropolis. Not high ambitions were these of the mushroom grower, as they appeared between the lines of the letter. Lower than a fallen instep were they. Down deep in the murky, gloomy depths of deserted mines is where this man's dreams of fortune led his mind. To quote his letter:

"I am a mushroom grower and I am looking for some empty mines in New Jersey in which to plant my mushrooms. Would be much obliged if you would send me a list of same, especially the ones that are good and damp."

With what masses of mushrooms is this fair land of ours due to be swamped if this man's dreams of numberless caverns jammed from side to side and to their roofs with monster bits of toothsomeness ever become realized.

PETROLEUM STATISTICS FOR FIRST HALF OF 1921

GASOLINE production increased 18 percent; kerosene decreased 12 percent; gas and fuel oil increased 22 percent, and lubricating oils increased 12 percent during the first six months of 1921, as compared with the same period of last year. Comparative statistics arranged by the Bureau of Mines are shown below:

	GASOLINE 1920	GASOLINE 1921	KEROSENE 1920	KEROSENE 1921
INCOME.				
Stocks January 1	446,793,431	462,381,837	339,319,690	393,070,923
Production	2,178,281,185	2,583,543,547	1,120,517,007	980,723,092
Imports	21,686,348	14,835,056	....	....
Total	2,646,760,964	3,050,760,440	1,459,836,697	1,373,794,015
OUTGO.				
Exports	286,657,962	286,564,512	419,111,094	380,128,998
Shipments to insular possessions	10,270,476	14,861,489	6,317,905	8,988,484
Domestic consumption	1,845,776,925	1,998,689,989	613,064,345	549,619,820
Stocks June 30	504,055,601	750,644,450	421,343,353	435,056,713
Total	2,646,760,964	3,050,760,440	1,459,836,697	1,373,794,015

	GAS AND FUEL 1920	GAS AND FUEL 1921	LUBRICATING 1920	LUBRICATING 1921
INCOME.				
Stocks January 1	714,124,455	837,404,414	137,318,934	160,522,477
Production	3,934,351,177	4,784,728,190	501,725,377	440,889,825
Total	4,648,475,632	5,622,132,604	639,044,311	601,412,402
OUTGO.				
Exports	851,537,772	*991,237,743	206,915,840	135,782,285
Shipments to insular possessions	56,317,919	63,474,802	2,350,116	2,795,367
Domestic consumption	3,098,551,578	3,318,755,971	296,565,804	201,951,629
Stocks June 30	641,968,363	1,248,664,088	133,212,551	260,883,121
Total	4,648,475,632	5,622,132,604	639,044,311	601,412,402

Figures on exports and shipments are taken from reports of the Bureau of Foreign and Domestic Commerce.

*Includes fuel or bunker oil for vessels engaged in foreign trade—1918, 2,975,106 barrels; 1919, 5,053,957 barrels; 1920, 10,874,918 barrels; 1921, 13,397,198 barrels.

MAGNESITE OUTPUT GREATER THAN FIRST ESTIMATED

FULL RETURNS from all magnesite producers to the U. S. Geological Survey show a 1920 production of 303,767 short tons, valued at $2,748,150, an increase of 94 percent in quantity and 120 percent in value over 1919. The accurate production figures are greater than those used in the Geological Survey's estimate of last January, which placed the output at between 275,000 and 300,000 tons.

Imports during 1920 amounted to 48,332 short tons, or more than three times those of 1919, which aggregated 15,852 short tons.

Detailed figures of American production are shown in the following tables:

CRUDE MAGNESITE PRODUCED AND SOLD OR TREATED IN THE UNITED STATES IN 1919-20

State and county	1919 Quantity (short tons)	1919 Value	1920 Quantity (short tons)	1920 Value
California:				
Fresno, Riverside, San Benito	2,876	$28,986	....	....
Fresno	....	....	708	$6,850
Napa, San Benito, Sonoma	....	....	16,608	218,750
Napa	10,112	86,752	....	....
Santa Clara	10,912	128,924	26,400	389,950
Stanislaus	4,057	40,730	4,063	39,435
Tulare	22,063	219,581	34,003	428,277
	50,020	504,973	81,782	1,083,262
Washington: Stevens	106,206	743,442	221,985	1,664,888
	156,226	1,248,415	303,767	2,748,150

CRUDE MAGNESITE PRODUCED AND SOLD OR TREATED IN THE UNITED STATES IN 1913-1920

Year	Quantity (short tons)	Value	Year	Quantity (short tons)	Value
1913	9,632	$77,056	1917	316,838	$2,899,818
1914	11,293	124,223	1918	231,605	1,812,601
1915	30,499	274,491	1919	156,226	1,248,415
1916	154,974	1,393,693	1920	303,767	2,748,150

ZINC, FIRST HALF OF 1921

PRODUCTION of zinc during the first half of the current year was less than half of that of the corresponding period of last year. Reports from all smelters which have been in operation, tabulated by the Geological Survey, show that the production from domestic ore during the first half of the year was 100,781 short tons, and from foreign ore 1,744 tons, a total of 102,525 tons. Production during the first half of last year amounted to 258,108 tons, and during the last half to 205,269 tons. Stocks on hand at smelters and at warehouses on June 30 aggregated 94,747 tons, having increased from 71,037 tons at the end of 1920 and from 29,892 tons on June 30 last year.

Apparent consumption during the first six months of 1921 was 83,965 tons as compared with 147,783 tons in the last half of 1920 and 175,268 in the first half.

In addition to the zinc produced from ore, 11,950 tons were redistilled from ashes, skimmings and drosses. This gives a total production of 114,475 tons, consisting of 13,358 tons of high-grade, 1,106 of intermediate, 17,466 tons of select and brass special, and 82,545 tons of prime western.

Electrolytic zinc amounted to 4,617 tons as compared with 27,591 tons in the last half of 1920 and 24,035 in the first half.

The number of retorts in operation on June 30, 1921, was 36,000 as compared with 56,000 at the end of 1920 and 95,000 on June 30, 1920.

The Geological Survey in its zinc report includes the following statement: "The demoralization of the zinc industry during the half-year with imports of 7,405 tons, exports of 2,255 tons and apparent consumption of 83,965 tons, is strikingly shown by comparison with the two periods of 1919 and the first half of 1920, when imports were nothing, exports from 70,000 to 90,000 tons, and consumption from 160,000 to 175,000 tons."

MINING CONGRESS PROCEEDINGS

PRINTED proceedings of the 1920 convention of the American Mining Congress held in December were received early in August and mailed to members. Delay in publication was occasioned by the printers' strike, which was especially serious in Baltimore. As a result, the Baltimore printing houses have gone on the open-shop basis.

ALASKA LIGNITE—The reserves of lignite in the Nenana region, Alaska, are estimated by the United States Geological Survey to be nearly 10,000,000,000 tons, which exceeds by nearly 3,000,000,000 tons the estimate made a few years ago, on the information then available, of the total quantity of lignite coal in the territory. The new estimates which are very moderate, indicate that the quantity of coal available in the Nenana coal field is greater than that in all the other surveyed fields of the territory.

BILLS AFFECTING MINING INDUSTRY BEFORE CONGRESS COMMITTEES

PROGRESS IN LEGISLATION of interest to the mining industry since our last issue has been in committee. The House Ways and Means Committee reported out, and the House passed, the tariff bill which is now before the Senate Finance Committee.

The bill for revision of our Federal tax laws has been reported from the House Ways and Means Committee and is reviewed in this issue of the Journal.

The Senate Finance Committee, which is considering the tariff bill, has not yet reached the metal schedule; however, under the chemical schedule both magnesite and manganese have been slightly discussed by those interests opposing a duty on these metals. The committee has received more than 250 applications for hearings, and it is feared that the hearings will be so lengthened as to defer the passage of the permanent tariff bill until late in the fall.

Both houses of Congress have been largely interested in the discussion pertaining to the Farm Loan Bill, and with the exception of the War Materials Relief Bill and the Annual Assessment Bill, together with a bill calling for the investigation of the Wholesale Coal Dealers Association, the mining industry has not been considered on the floor of either house.

Senator Kenyon of Iowa, on August 10, reported from the Agricultural Committee his resolution which provides for an investigation of the Wholesale Coal Dealers' Association.

The War Minerals Relief Bill was reported from Committee by Chairman Rhodes early in August. It is understood that he has failed to secure a special rule for the consideration of this bill by the House and this may mean that the measure will have to await its consideration upon call on the calendar. It is feared that the recess to be taken by Congress during the month of September will further delay the consideration of this important measure.

The passage of the annual assessment bill, which changes the date of doing assessment work from the fiscal year to the calendar year, is another piece of legislation which has been enacted during the month.

The tax bill passed the House on August 20. The mining industry is to be congratulated upon the fact that this bill in no way interferes with the present valuable incorporation in the 1918 law of the depletion and discovery clauses.

The Senate has passed a bill authorizing the President to consolidate the offices of register and receiver of land offices into one.

Representative Rhodes, Chairman of the House Committee on Mines and Mining, has introduced a bill providing for investigation by the Bureau of Mines of non-metallic minerals and chemicals produced from mineral sources.

Senator Harris of Georgia has introduced a bill amending the Clayton Act, which bill is aimed at the oil trade. It prohibits any corporation or association producing or refining petroleum or by-products from selling these products within the United States at a different price than that at which the same grade or quality is sold by any other corporation or association when the stockholders of such corporation own or control 25 percent or more of the stock of such other corporation.

As usual, the coal industry was not forgotten. The Frelinghuysen Coal Stabilization Bill came up for consideration on the floor of the Senate but was passed over on the motion of Senator Wadsworth of New York. No debate or opposition was connected with the action.

Congress adjourned on August 24 and will not reconvene until the first of October. This will give the Senate Finance Committee ample time in which to consider the tariff bill and put them in position to immediately take up the tax bill after October first.

The following bills of interest to the mining industry have been introduced since our last issue:

NON-METALLIC MINERALS

H. R. 8126. Introduced by MR. RHODES; referred to the Committee on Mines and Mining. The bill authorizes the United States Bureau of Mines to investigate and conduct inquiries and scientific investigations in the United States and its territories concerning the mining treatment, and utilization of non-metallic minerals, such as sulphur, phosphate rock, feldspar, potash, mica, graphite, talc, barytes, limestone, etc., with the main object of elimination of waste both in their production and utilization. It further provides that investigations shall be conducted for the purpose of aiding in the efficient production of the non-metallic and other mineral raw materials for the chemical industry, and to investigate and obtain fundamental data needed for the efficient production of chemical products from mineral sources.

BLUE SKY

H. R. 7868. Introduced by MR. VOLSTEAD; referred to the Committee on Judiciary. This bill authorizes every Federal Reserve bank to appoint on its board of directors a committee to be known as a securities committee, whose duty it shall be to keep themselves informed concerning securities sold or offered for sale. Each committee shall consist of not less than five nor more than fifteen members, one of whom shall be the chairman of the Federal Reserve bank of the district. Whenever it shall appear to any member of this committee that in the selling of any securities involving the use of the mails any person is employing any device to defraud or obtain money by means of false pretense, it shall make a full report thereof to the Attorney General, who, if he shall consider it to be in the public interest, may require such persons to file with him a statement in writing under oath as to all facts and circumstances. He may also require such other data as he may deem relevant and may make special and independent investigations. The committee is under penalty of $1,000 fine or imprisonment not exceeding one year or both for any officer or employee who shall divulge in any manner the name of any person or any witnesses examined for information. The Act expressly pro-

IMPORTANT BILLS REVIEWED IN THIS ISSUE

NON-METALLIC MINERALS:
H.R. 8126: Mr. Rhodes (Investigational Work)

BLUE SKY:
H. R. 7868: Mr. Volstead (Prevention fraud of securities)

WAR MINERALS:
H. R. 7765: Mr. Raker (Relief of claimants)

COAL:
H.R. 7948: Mr. Sutherland (Agricultural entries in Alaska)

OIL:
H. R. 7950: Mr. Jacoway (Investigation drilling and production in Arkansas)

INDIAN RESERVATION:
H.R. 8010: Mr. Riddick (Leasing of lands on Ft. Peck Reservation, Mont.)

FOREIGN CREDITS:
H.R. 8085: Mr. Buchanan (Creation of Commision of Foreign Credits)

TARIFF:
H. R. 7456: Mr. Spencer (Amending Tariff Bill)

REVENUE:
H.R. 7885: Mr. Appleby (Amending Revenue Act)
H.R. 8245: Mr. Fordney (Reduction, equalization and simplification of Revenue Act of 1918)

vides that it shall not interfere with any state law to regulate the sale of securities within such state.

WAR MINERALS

H. R. 7765. Introduced by Mr. Raker; referred to the Committee on Mines and Mining. This bill amends section V of the Act to provide relief in cases of contracts connected with the prosecution of the war by adding the following: Provided, that all claimants who, in response to any personal, written or published request, demand, solicitation, or appeal from any of the Government agencies mentioned in said Act, in good faith expended money in producing or preparing to produce any of the ores or minerals named therein and have filed or mailed their claims within the time and in the manner prescribed by said Act, if the evidence already filed in support of said claims clearly shows them to be based upon action taken in response to such request, demand, etc., shall be reimbursed such net losses as they may be found to have incurred and are in justice and equity entitled to from the appropriation in said Act; and provided further, that the Secretary of the Interior is authorized to review and reconsider for an award claims in the settlement of which arithmetical errors have been made, and all claims wherein decisions have been determined by rulings contrary to provisions of this amendment, and to ascertain, as a matter of fact, if such claims are raised upon a request, and to ascertain if such claims are based upon a request, etc., as provided by this amendment, and that the unexpended balance of the appropriation carried in the Act be continued available for the purposes set forth above until all such claims shall be fully settled or disposed of.

COAL

H. R. 7948. Introduced by Mr. Sutherland; referred to the Committee on Public Lands. This bill provided for the right of agricultural entries on coal lands in Alaska and is similar to all other bills which have been introduced during the session providing for such entry. The bill provides that the coal, oil, or gas deposits reserved shall be subject to disposal by the United States in accordance with the provisions of the laws applicable to such deposits in Alaska.

OIL

H. R. 7950. Introduced by Mr. Jacoway; referred to the Committee on Mines and Mining. The bill appropriates the sum of $15,000 to be expended by the Secretary of Interior through the Bureau of Mines for investigations regarding the drilling and production of oil and natural gas in the State of Arkansas with a view to the prevention of waste and economic development of these resources.

INDIAN RESERVATION

H. R. 8010. Introduced by Mr. Riddick; referred to the Committee on Indian Affairs. The bill provides for the leasing for mining purposes of unallotted lands on the Fort Peck Reservation, Montana. A similar bill was introduced by Senator Walsh, S. 2312.

GOVERNMENT INVESTIGATIONS

H. R. 8085. Introducced by Mr. Buchanan; referred to the Committee on Banking and Currency. The bill creates a commission to be known as the Commission of Foreign Credits and provides that upon written request of any domestic corporation, association, etc., proposing to sell the products of any essential industry in this country to any foreign Government, association, firm, etc., it shall be the duty of the commission to make diligent inquiry into the financial condition of such foreign purchase and all securities offered as a basis for credit and if found to be such that the credit may be prudently extended, shall certify that fact to the Federal Reserve Board and thereupon issue negotiable notes, maturing within one year from the date thereof, which notes shall become eligible as collateral with the regional reserve banks of the United States. The bill appropriates the sum of $50,000 and the Commission of Foreign Credits herein created shall have the power to prescribe rules and regulations.

TARIFF

H. R. 7456. Introduced by Mr. Spencer; referred to the Committee on Finance. This is an amendment to the Fordney Tariff Bill and provided for a tariff on barytes ore, crude or unmanufactured, one-half of 1 cent a pound; ground or otherwise manufactured, three-fourths of 1 cent per pound; precipitated barium sulphate or blanc fixe, 1 cent per pound.

REVENUE

H. R. 7885. Introduced by Mr. Appleby; referred to the Committee on Ways and Means. Amending section 210 by striking out all of that section and substituting the following: that, in lieu of the taxes imposed by subdivision (a) of section 1 of the Revenue Act of 1916 and by section 1 of the Revenue Act of 1917, there shall be levied, collected, and paid for each taxable year upon the gross income of every individual a normal tax at the following rate for the calendar year of 1921, and for each calendar year thereafter, 1 percent of the amount of the gross income in excess of the credits provided in section 216. Section 211 is amended to provide for the basing of all rates on gross income, and striking out all of the rates enumerated after 52 percent, this rate to read: 52 percent of the amount by which the gross income exceeds $100,000. This bill further strikes out the following sections and paragraphs:

Section 214 (deductions) of part 2 (individuals).

Title II (income tax).

Title III (war-profits and excess-profits tax).

Section 630 of Title VI (tax on beverages).

Paragraph V, section 900, Title IX (excise taxes).

H. R. 8245. Introduced by Mr. Fordney; referred to the Committee on Ways and Means. This bill provided for the reduction and equalization of taxation and amends and simplifies the Revenue Act of 1918. This bill is reviewed completely in another part of the issue.

COMPUTING OIL ROYALTIES.—The United States Bureau of Mines has issued a pamphlet entitled "Tables for Computing Oil Royalties Under the Leasing Act of February 25, 1920," by R. C. Patterson and D. W. Moran. The tables have been compiled with a view to avoiding the long and tedious computation which would otherwise be required in arriving at royalty figures in connection with the operation of oil producing leases on the public lands of the United States. Copies of this pamphlet may be obtained by addressing the American Mining Congress, Washington, D. C.

PROSPERITY RETURN SEEN IN LARGER RAILROAD EARNINGS

By C. H. Farrell

THE GENERAL SITUATION in the railroad world begins to show signs of renewed prosperity, and in order to see what encouragement there is we perhaps had better review the various elements that go to make up the success of our carriers. First of all:

EARNINGS for the month of June and for the month of July, so far as the reports are available, are showing marked increases over the previous month. In May the carriers had a net operating income in excess of that for April, and in June May was surpassed with a sufficient amount to produce an annual rate of return on the full valuation of the property as fixed by the Interstate Commerce Commission for rate-making purposes of 3.1 percent. There has been no general compilation of results for July yet, but early reports indicate that this month will exceed June. As a matter of fact July is the first month in which we should get a real indication of the wage reductions and the numerous economies which are being put into effect by the carriers.

OPERATING EXPENSES show a decided decline in June under the month of May, and compared with May and June of last year the reduction is very large. In fact, the operating ratio of the carriers, which means the number of cents out of every dollar which must be spent before any income can be reached, is dropping close to 85 percent, while a year ago it was in the vicinity of 95 percent. This figure was obtained before July 1, when the wage reductions went into effect, and it stands to reason that the carriers must soon be able to get the benefit of the things for which they have been fighting ever since the return of their lines to private management. This should lead to reductions in:

RATES. There is probably nothing in sight at the present time which would warrant a prediction that there will be any general decrease in freight rates, but one can at least be hopeful that the present rate structure will earn for the carriers that which the law says they are entitled to and that such reductions and readjustments can be made from time to time as can iron out the gross inequalities now existing as to many commodities and make possible a rate structure which will move the traffic. The carriers are going ahead in many instances either voluntarily or in co-operation with the Interstate Commerce Commission making reductions such as those recently made on grain, and the trend of public opinion as felt by the commission is indicated in its recent opinion suggesting that the carriers make reductions in the rates on live stock in western territory down to 80 percent of the present rates. In this particular instance the commission does not find existing rates to be unreasonable, but it does feel that that there should, nevertheless, be reductions and makes such a suggestion to the carriers. The evidence in this case and the arguments before the commission on behalf of the shippers were all to the effect that the live stock industry could not bear up under the existing structure and must have relief. The attorneys asked the commission to look at the situation as an economic one and did not attempt to show any unreasonableness of the rates from a transportation standpoint. If the logic used in this decision be followed by the commission and by the carriers it should mean that many maladjustments now existing and many scales of rates which are ruinous to the various industries are about to be ironed out and something approaching normal condition restored in the rate world, even though there be no general reduction.

Another factor of immense importance to the railroads, and to numerous industries and the general public as well, is the proposed refunding of railroad indebtedness to the government. In only a few instances final settlements have been made with the carriers for use of their property during federal control, but because not only is the government indebted to the carriers but the carriers are in turn also indebted to the government, and as there are some questions which make an immediate audit and settlement of all claims impossible nothing has been done in the belief that when any settlement is made such settlement should be final. The carriers today are indebted to numerous industries throughout the country from which they have obtained their fuel and supplies, and they always give as a reason for non-payment of bills, such as their coal bill, which is very large, that the government has not yet made the necessary settlement with them and that they are consequently out of funds. The President, realizing to what extent this situation affected not only the carriers but also numerous industries and the public as well, recommended to Congress that immediate settlement of all bills against the government which could be determined be made and that the claims arising out of "inefficiency of labor" be side-tracked for further consideration on their merits at a later date. He held, further, that it would not be proper to require the carriers in their present financial state to pay immediately to the government the sums which they owe for capital expenditures made and paid for by the government during federal control. He proposed that the carriers be allowed to fund over a period of years all of this indebtedness, which it is estimated amounts to about $700,000,000. This would leave the government free to pay the carriers where claims were not contested, and it is proposed to market through the War Finance Corporation the railroad securities now held by the government for the purpose of obtaining the funds which are to be turned over to the carriers. This scheme has met with quite general approval and it is expected that Congress will enact the necessary legislation in the near future, although present recess plans and some opposition may make it necessary to hold over until this fall the passage of the laws required. It seems that the carriers should not be required to pay for the capital expenditures which the government made at a time when they are financially crippled, but over a period of years, inasmuch as they are paying the government interest and would have paid for these expenditures little by little if they had made them themselves. As to the settlement of the claims against the government which are just, there is no reason why immediate payment should not be made, and inasmuch as the funds for such payment are coming from railroad securities the taxpayer should not object to this plan. When it is realized that the greater part of this amount will go to the railroads only long enough for them to disburse it among the coal, steel and numerous other industries to whom they owe money, it is plainly seen that the action will not only benefit the carriers but will also be of material assistance to numerous industries and to the people themselves, inasmuch as it will mean the resumption of operation of many plants and the reemployment of many men both by the carriers and the industries.

TONNAGE continues to be a disappointing element because, while the figures show some increases from week to week, they do not compare favorably with similar figures for 1920 and 1919 except in grain and grain products. That commodity is enjoying the largest movement in its history, in spite of the fact that present rates are said to be prohibitive and are before the commission in an attempt to get them revised downward. There is a stronge feeling among many people that the carriers cannot hope for an increased tonnage until they have allowed rates to get down much below present levels, and there is always the undercurrent that just ahead of us is a great business revival which will be participated in by all the minute it is once started. Such a revival of course would produce a much larger tonnage, and if the economies of the carriers continue to show as good results it should mean a fair return for them upon a smaller rate basis.

LEGISLATION, as far as the railroads are concerned, does not hold out any promise for immediate relief except as to the funding bill. This bill, which has been referred to above, has been before the Senate Committee on Interstate Commerce as well as a similar committee of the House, and may be reported out and passed in the near future unless a recess is taken. If so, such a law cannot be enacted until late fall, although it is believed by some to be as important as either the tax or tariff program. The general inquiry which the Senate committee conducted for a time cannot be productive of any great results for many months, inasmuch as it was never continued after once being suspended and did not at any time produce any evidence which proved anything except the facts already known as to the general situation. There will be, however, as long as Congress is in session, continued pressure for repeal of the guaranty section of the Transportation Act, which is one requiring the commission to allow carriers a net return upon a fair valuation for rate-making purposes as near as may be to 5½ percent, with an additional ½ percent added at the discretion of the commission. Next in importance to this proposed repeal is an amendment to the present section under which the commission has, in numerous instances, taken jurisdiction of intrastate rates over the objections and protests of the state commissions. The section giving the commission this authority is perhaps not as important as we are sometimes led to believe, inasmuch as it simply means that one body shall regulate where interstate traffic is involved instead of having a number try to handle locally a situation which is in reality not local. Nevertheless, the state commissions desire this amendment and they are not without strong support in Congress and alsewhere. There are numerous other bills before Congress affecting the rairloads, but probably none which will make any great difference in the general situation.

PRACTICAL MINING TOPICS WILL BE DISCUSSED

AT A MEETING of men actively in charge of mining operations to be held in Salt Lake City during the first week in October, it is proposed to make the meeting in effect a metal mining institute. Subjects likely to be discussed include signalling from moving cages, sectional stopping and electrical installation, and general discussions will be held of metal mining methods, safety measures and kindred topics.

The following committees have been appointed to arrange for the meeting:

Program committee—Forest Mathez, Silver King Coalition Mines Co., Park City, chairman; E. A. Hamilton, U. S. Mines, Bingham, vice-chairman; T. P. Billings, Bingham Mines Co., 404 Dooly Bldg., Salt Lake; E. F. Birch, Knight Investment Co., Silver City; Carl A. Allen, State Industrial Commission, Salt Lake; A. J. May, Tintic Standard Mining Co., Dividend.

Arrangements committee — A. S. Wither, Utah Consolidated Mining Co., Bingham, chairman; Wm. Owens, Eagle & Blue Bell Mining Co., Eureka, vice-chairman; N. A. Dunyon, Ontario Silver Mining Co., Salt Lake; O. N. Friendly, Judge Mining & Smelting Co., Park City; J. D. Schilling, Jr., Utah Copper Co., Bingham; A. G. Mackenie, 914 Boston Building, Salt Lake.

All of those whose names appear on the committees are mine superintendents with the exception of A. G. Mackenzie, who is secretary of the Utah Chapter of the American Mining Congress, and Carl A. Allen, who is the head of the state mine inspection department. Mr. Allen and Mr. Mackenzie have been placed on the committees for purposes of general consultation and to handle the office and field work of the committees.

UTAH SETS NEW RECORD IN SHAFT SINKING

ANOTHER WORLD'S RECORD fell before the skill of Utah workmen when, on August 15, the miners of the Walter Fitch, Jr., Company of Eureka, completed 427½ feet of a vertical three-compartment shaft on the Water Lily property of the Chief Consolidated Mining Company near Eureka. The firm of Walter Fitch, Jr., Incorporated, is a contracting organization headed by Walter Fitch, Jr., a son of Walter Fitch, who is president of the Chief Consolidated Mining Company of Eureka and vice governor of the Utah Chapter of the American Mining Congress.

The record made by the Utah workmen exceeds by 117½ feet the best previous effort made by miners and was completed in thirty-one consecutive days by three shifts of men. The best previous record was made by the Crown Mines, Ltd., at Johannesburg, South Africa, with a distance of 310 feet. In 1916 the Walter Fitch, Jr., Company made a record of 261 feet at Eureka.

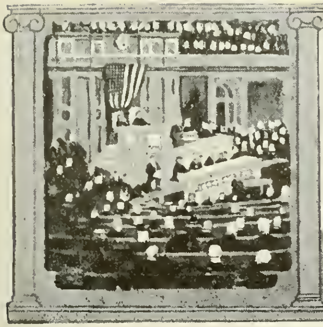
The crew which established the new record is composed almost entirely of American miners. They operated continuously and lost only thirteen hours in repairs and power failures during the entire period of thirty-one days. They are not yet satisfied, but are now going out to beat their own record.

CARNEGIE TECH INVESTIGATES COAL PROBLEMS

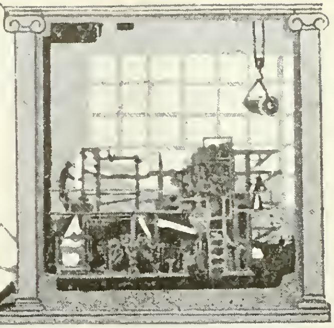
WORK ON THE PROBLEMS, the "constitution of coal" and "acid resisting equipment for use in coal mines," is being done at the Carnegie Institute of Technology under a co-operative agreement with the United States Bureau of Mines. Research upon the constitution of coal will consist of the study of the Freeport coal bed with a view to utilization of the bone and cannel coal constituents, and will be done by A. W. Voorhees, who investigated flotation problems last year while a research fellow at the Idaho School of Mines. The problem of acid resisting equipment is being handled by George M. Enos, formerly analytical assistant at the experiment station of the South Dakota School of Mines.

MINING FELLOWSHIPS OFFERED

THE UNIVERSITY OF ALABAMA, School of Mines, offers five fellowships in mining and metallurgical research work, in co-operation with the United States Bureau of Mines, for the scholastic year 1921-22. The fellowships, valued at $540 each, have been established for the purpose of undertaking the solution of the problems being studied by the United States Bureau of Mines which are of special importance to Alabama and other southern states.



PUBLIC OPINION



DR. CHARLES AUBREY EATON, former head of the National Service Department of the Emergency Fleet Corporation, in an address before the New Jersey Manufacturers' Association had some interesting comments to make upon the open versus the closed shop. In part he said:

"This is the land of opportunity for the individual. I am opposed to the closed shop first on economical grounds because it gives industry to the weakest and poorest man, which is rotten economics. I am opposed to it on moral grounds because it permits a class of persons to relegate to themselves rights which they cannot exercise under the American constitution or under the moral law, as I recognize it, but mostly I am opposed to it on American grounds because our constitution guarantees to every individual life, liberty and pursuit of happiness, and whenever a private organization, be it composed of capitalists or laborers keeps to itself the right to say this or that man shall not work and shall not work there, then it establishes itself as a power greater than the constitution and government of the United States and either it or the government has to go.

"If you are going to have open shop, first of all you have got to recognize that the labor union is just as nearly part of the forward movement as is the Manufacturers' Association. I want to see open shop in our industries, in our transportation, in our religion, but if you have that you have got to pay the price, and the price is, first, that the employer shall himself become the leader and champion of the men whom he employs.

"You cannot have the open shop on any other basis because this world is divided into led and leaders. The working men, forty million of them in this country are like you and me; they have got to have a leader. If you as his employer wont lead him he goes outside and gets a professional leader, and the only way the professional leader can keep his job is to prove to the man you are his oppressor and he must redeem the oppressed working men from you, the oppressor, who pays his wages.

"The ordinary workingman thinks his employer is just rolling in wealth. The fact is, you and I know, that big and little employers alike at this present moment are only about one comfortable lope ahead of the sheriff, and there is no telling how long that condition will last.

"You can't take the place of leadership of your men except you are willing to pay the price, and the price is that the employer shall be absolutely white and clean and straight clear through and through. It takes the biggest and best men in the world to lead his employees, but once they have confidence in you, once they know that you will be square with them, that when they need heaven you will give it to them and when they need hell you will give them that, and you will take your own medicine without a wry face; once they belive you are that kind of a man, you have got them.

"I want to see the labor union go on not as a fighting machine but something like the United States Chamber of Commerce, representing the interests of the business men of the country. I want to see it continue as the mouthpiece of labor in this country expressing the aspirations of the working people in legislation, in education and in a thousand and one ways, but the time has come in our great house cleaning when we have got to shift these things through to the bottom, and one of the things is we have got to have one law for everybody.

"You ask for a different kind of court for labor questions, there ought not to be a different kind of court for labor questions, there ought to be one law for the rich man and one law for the poor man, one law for the working man and one law for the man who employs him, one law for the Democrat and one law for the Republican, one law for the foreign-born and one law for the home-born, and every institution in this country ought to be brought up to that law and made to keep it and held responsible to it, and I hold it is nothing short of anarchy to enact a law in our Congress year after year in which we specifically exclude certain interests namely, the labor unions and the farmers, from the law that governs you business men in combination in restraint of trade. It is wrong.

"I would incorporate you under the law and I would make you obey the law. I would incorporate the working man under the law and I would make him obey the law. I wouldn't permit him by force to terrorize anybody and I wouldn't permit you to do it; that I believe is the essence of Americanism.

"The strike is the most wasteful and wicked institution devised by man. We have gone into a study of that problem covering a period of thirty years, and it has been demonstrated by a careful analysis of government facts that the strikes of this nation have cost the nation directly and indirectly close to five million dollars every twelve months for the last thirty years."

WHILE THE METALS SCHEDULE of the Fordney Tariff Bill was not subject to debate on the floor of the House, CONGRESSMAN TIMBERLAKE of Colorado made an interesting speech in behalf of this schedule from which we quote as follows:

"In the building of a tariff platform on which the industries of our country are to stand for many years to come it is absolutely essential that no gaps be left in this platform through which any worthy industries may fall to bankruptcy and extinction.

"Numerous objections have been raised to these proposed tariffs on so-called raw materials. What do these raw materials include? They include the products of our farms and our ranges, of our mines and our smelters; they include those industries which employ labor in greatest quantity; they include those industries which are the bone and sinew of our Nation.

"Repeated statements have been made on the floor of the House as to the alleged increased cost to consumers because of the proposed tariff on raw materials. Let us take some actual cases in point and see what happened under free trade. Under free trade we have built up no ferromanganese industry. When the need for ferromanganese came on us suddenly during the war we had no domestic source of supply. The price of ferromanganese went to \$400 and \$500 a ton. We had no protection for potash. When our supplies from Germany were cut off the price of potash rose from 25 cents per unit to \$5.50 per unit. The same thing has happened with regard to quicksilver, which rose to \$127 a flask in 1918.

"Another objection which has been raised against these tariffs is that these minerals being valuable materials for war purposes, should be left in the ground as potential reserves. The best statement which I can quote to you is that made by Guy P. Riddell, formerly metallurgical engineer for the United States Tariff Commission. He said that as between a totally undeveloped natural resource in time of emergency and a totally depleted one there was no choice. We saw the most utter fiasco in an effort to stimulate the production of these war-time minerals by an advertising propaganda, on which the government has never made good, during the last emergency. Do you think that one of those war mineral operators could be got to go forward and produce these materials again in time of emergency?

"Private enterprise unprotected will never go into the operation of these necessary mineral industries in war or peace times either. If an emergency arose the government itself would have to open up these industries if they were closed down. By the time the necessary legislation could be enacted and these industries financed and opened up by the government, we could be thoroughly overridden by our foes.

"A correct adjustment of our tariff problem will go a long way toward settling our transportation issue.

"Is there any gentleman in this Congress who is so bold as to tell me that the only way which we can achieve a readjustment which will bring about plenty and peace, and the smooth-running industrial activity in this country is to sit idly by and live on our fat until the nations which are indebted to us can catch up with us economically? Must we sit in idleness while others do the work of the world? Must our American workingman be forced into idleness to give labor to European workingmen to pay off their governmental debt to the United States? We have a large export business, it is true. We want to keep all of it. We want more if we can have it in conjunction with sound internal, industrial, and financial business conditions. But what, after all, is export business? It is the disposal of surplus merchandise produced in going American industrial organizations. You can not have surplus production from bankrupt domestic organizations which are fighting with each other and with foreign competitors for a share of their home market. The political, industrial, and economic history of this country will show this conclusively, that we have learned from bitter experience that it takes twenty years of protection to prepare this country economically to stand four years of free trade."

MANUFACTURERS generally have felt very keenly the business depression. The first avenue of retrenchment which has occurred to them has been a curtailment of their advertising campaign. Almost without exception manufacturers reduced their advertising expenditures from one-third to one-half. Whether this is a wise procedure is a question which has been much considered by economists and by the press. One of the most interesting editorials we have seen upon this subject is that published by the *San Francisco Examiner*, which in part says:

"We will refrain from emphasizing advertising's direct services to the public in lowering prices of goods, maintaining quality among products and promoting correct, convenience, valuable buyer-knowledge. The great and outstanding fact for laymen and advertising men to grasp now is that advertising by its own demonstration is a valuable and vital factor in the promotion of the whole national good. No man is outside its sphere of its good. It embraces all and affects all.

"The laymen accustomed to look doubtfully or indifferently upon advertising as an instrumentality solely for the benefit of the fortunate few, now suddenly sees it is a power intimately and inseparably linked with himself and his own interests. Advertising has kept alive hope. It has shamed and shattered pessimism. It has encouraged industry, fostered the gradual recovery of the buying impulse, and at last created a firm market. Now it will go forward to assist in the development of good business and in the restoration of satisfactory political and economic conditions throughout the country."

WITH DIRECTOR DAWES of the Budget Bureau receiving a great deal of publicity in his saving campaign even greater emphasis has been brought to bear upon the "reckless national expenditures." Undoubtedly there has been much waste in bureaucratic control and investigation. W. J. WOLLMAN & Co. has issued the following pertinent statement:

"A curb should be placed on the costly bureaucratic regulation or control of private enterprise. Such devices seldom result in benefit to any but the salaried officials. Congress should abandon its plan to place the coal mining and packing industries under federal supervision. Competition will settle the problems involved much more quickly and efficiently than red tape. Private enterprise has been working its way forward since the dawn of civiliation. It has solved its own problems; it has taken its profits and swallowed its losses.

"The progress of the world shows that in the end the balance has been written in black ink. Whenever the government has stepped in, whether in the administration of the postal service, the operation of railroads, or any other undertaking, the story of the result has been told in red ink. Taxation has made up the deficit.

"For the next quarter of a century the leading issue before the country will be the question of tariff or fiat money or imperialism. It will be the cost of government getting the government out of extra-governmental activities and the control of national expenditures. There is no time like the present for the recognition of this fact."

PORTLAND CEMENT.—Production of Portland cement for the first seven months of 1921 amounted to 97 percent of the quantity manufactured in the corresponding months of 1920 and shipments to more than 96 percent of those for the same period of last year. Stocks on July 31 were more than 1,470,000 barrels larger than on December 31 of last year and above the average for July of the last preceding five years. Production of unground cement during the seven months' period amounted to 53,000,000 barrels. The July output exceeded 9,000,000 barrels.

JOHN L. COCHRANE SUCCUMBS

FOLLOWING a protracted illness which began with a paralytic stroke last January, John L. Cochrane, statistician of the United States Bureau of Mines, died in Cleveland on the night of August 3-4.

Mr. Cochrane had been in the federal service at Washington fourteen years, having been with the technologic branch of the Geological Survey before he became connected with the Bureau of Mines. Since the creation of the Bureau in 1910 he had been in charge of its publication work. He contributed to the press a great number of articles on mine safety and mineral conservation topics, and was co-author of the Geological Survey bulletin on "The fire tax and waste of structural materials in the United States."

Before entering the federal service, Mr. Cochrane had become one of the best known newspaper men in the United States. He filled editorial positions on the *Cleveland Leader* and the *Cincinnati Commercial-Tribune* and later became night city editor of the *Washington Post*. But his long service at the Bureau of Mines was characterized by something more than marked journalistic ability, namely, by a deep appreciation of the problems of the mining industry and a friendly feeling for both the operator and his employes. He took a personal interest in his work, and his object in writing for the press was always to advance the work of the Bureau of Mines or to help the mining industry rather than to secure publicity merely. His funeral, which was held in Cleveland August 5, was attended by friends from Washington, including the secretary of the American Mining Congress and the assistant director of the Bureau of Mines.

Born in Dundee, Scotland, Mr. Cochrane came to the United States at the age of eight years, and was forty-nine when he died. He is survived by his widow, Mrs. Emily W. Cochrane, and two sisters, the latter residing in Cleveland.

Stuart B. Stone, of Kentucky, has been appointed chief of the Division of Information and Publication of the Bureau of Mines, succeeding the late John L. Cochrane. Mr. Stone was Mr. Cochrane's assistant for several years. Before going to Washington he had been engaged in newspaper work in Kentucky, Oklahoma and Kansas. He has been an extensive contributor to magazines and is the author of two humorous books, "The Nonsensical U. S. A." and "The Kingdom of Why."

Conducted by John Boyle, Jr.

1,378,920—*R. S. Towne*, New York, N. Y., and *F. B. Flinn* of Orange, N. J., May 24, 1921, assigned to Pneumatic Process Flotation Co.

Process and Apparatus for Separating Ores in which the pulp is delivered at or near the vertical axis of a relatively widely extended pulp column, permitting the solid content particles to commence their descent on lines approximately close to the vertical axis, and causing them to move outward as they descend, so that they shall be subjected to repeated actions of the air globules as the latter ascend.

1,379,095—*A. L. Genter*, Salt Lake City, Utah, May 24, 1921, assigned one-half to General Engineering Co.

Continuous Thickening Process employing preferably an open tank wherein a series of suction filter elements are submerged. The construction of apparatus is such that the overflow rim common to decantation tank thickeners is eliminated and the filtrate withdrawn from the elements by a vacuum means on the one hand and a counter current cleansing action is applied to the interior of said elements in such a manner that during the process of filtration, different series of these elements are being cleansed while the balance are filtering in the same tank.

1,379,427—*W. Whaley*, Knoxville, Tenn., May 24, 1921.

Loading Machine comprising a magazine or receptacle applied at the rear of the conveying mechanism to receive the material discharged from the conveying mechanism, the said receptacle being at such height as to permit bringing a vehicle or other portable receptacle or carrying means below the first-mentioned receptacle, in order that the magazine receptacle may uninterruptedly receive material from the elevating mechanism and vehicles may periodically be placed below the magazine receptacle and the material discharged into the carrying vehicle.

1,379,428—*W. Whaley*, Knoxville, Tenn. May 24, 1921.

Shoveling Machine comprising a conveyer and a shovel mechanism applied to the forward end of the conveyer to take up material and deliver it to the conveyer, the forward end of the conveyer being at the floor or ground level, and the rear end of the conveyer being elevated to facilitate discharge of material into a car or elsewhere.

1,379,514—*K. F. Begley*, White Star, Ky., May 24, 1921.

Mine Tar Tag Holder.

1,379,869—*D. F. Lepley*, Connellsville, Pa., May 31, 1921.

Mine Skip.

1,379,870—*D. F. Lepley*, Connellsville, Pa., May 31, 1921.

Gravity Car Control for Mine Hoists.

1,380,650—*J. Hebbard*, Brokenhill, New South Wales, Australia, June 7, 1921, assigned to Minerals Separation North American Corporation.

Flotation Apparatus in which the aeration and agitation are effected by a hydraulic action of a gravity flow of the ore pulp through successive separating vessels; comprising a level regulating over-flow for each vessel disposed at a lower level than its concentrates overflow, and each level regulating overflow (except the last) discharging directly into the next separating vessel in the series.

1,380,665—*F. J. Lyster*, Broken Hill, New South Wales, Australia, June 7, 1921, assigned to Minerals Separation North American Corporation.

Flottion Apparatus comprising in combination a separating box having a residues outflow at the bottom and an overflow at the top, a vessel mounted therein with its lower end immersed in the liquid and having an outlet at the bottom into the separating box and an overflow launder at the top, and a feed box having a discharge pipe at the bottom forming a pulp-operated air injector delivering into the said vessel.

1,380,871—*W. G. Swort, F. A. Jordan, E. W. Davis* and *T. P. Counselman*, Duluth, Minn., June 7, 1921.

Magnetic Separator comprising a rotatable drum and a series of electro-magnets distributed in arcuate form within and adjacent the periphery of said drum and coacting therewith to attract magnetically susceptible particles carried thereto, some o said magnets being of relatively strong excitation and other magnets being of relatively weak excitation to produce substantially distinct areas of variable magnetic potency and means for changing the location of said areas.

1,381,204—*R. G. Lawry*, Chicago, Ill., June 14, 1921, assigned to Roberts & Schaefer Co.

Combined Screen and Picking Table having at both ends relatively wide conveying surfaces and intermediate such wide surfaces having a plurality of separate narrow conveying surfaces arranged in parallel, there being sufficient space between the narrow surfaces to permit an operator to stand and work between them.

1,381,862—*E. Deister*, Fort Wayne, Ind., June 14, 1921.

Ore Concentrator.

1,377,189—*B. H. Dosenbach*, Butte, Mont., May 10, 1921.

Flotation Process comprising introducing into the pulp a gaseous modifying agent tending to cause flotation of all of said constituents and simultaneously introducing a gaseous substance which has a deterrent effect upon the flotation of some of the metalliferous constituents of the ore but not upon others.

1,377,842—*N. D. Levin*, Columbus,Ohio.. May 10, 1921, assigned to Jeffrey Mfg. Co

Mining Apparatus relating to siack shoveling devices adapted to remove the cuttings produced by the cutter bits of mining machines of the well known short wall type. In such machines the cuttings produced by the cutting mechanism are drawn rearwardly by the movement of the cutting bits and discharged within the main frame of the mining machine as the bits pass around the drivtad sprocket wheel. The accumulation cul-eh tings in proximity to the sprocket ofeen tends to choke the machine and cawhe ce bits to carry slack forward along the usenp side of the cutter arm to be dropped eirshe kerf, thereby interfering with th prurtni breaking down of the material. As nthe-b fore practised these cuttings havegsoter removed by the use of a shovel in the hront of the miner's helper. It is the especial object of this invention to provide a mechanically actuated shoveling device for the removal of these cuttings which may be conveniently attached to the mining machine when it is in position for operation or may be separated therefrom for transportation from one working place to the next.

1,378,362—*N. D. Levin*, Columbus, Ohio. May 17, 1921, assigned to the Jeffrey Mfg. Co.

Mining Apparatus. In coal mines, break throughs, or connecting passages, are formed at regular intervals in the walls between adjacent rooms and between parallel adjacent entries, through which is maintained the circulation of air necessary to the ventilation of the mine. The formation of these break throughs necessitates the occasional operation of the cutting mechanism along the side walls of the rooms and entries in lines parallel to their length. By the earlier machines the cutting of such break throughs could only be accomplished by entirely disconnecting the cutting mechanism from the truck and laboriously moving it by means of bars, cables, etc., into the desired cutting position, and after the completion of the cutting operation, moving it back in like manner to a position from which it might be reloaded upon the truck. It is the especial object of this invention to provide an apparatus in which the cutting mechanism can be carried by the truck during transportation and in which it is movable horizontally therefrom, without breaking its connection therewith to rest entirely upon the floor and to be moved horizontally under the guidance and control of the truck to cut a horizontal kerf from one side to the other of a relatively wide room or to cut a horizontal kerf longitudinally of the side wall of a relatively narrow room.

1,378,521—*W. Brimley and W. Collins*, Benton, Ill., May 17, 1921.

Coal Washer. Screens are mounted in the upper portion of the tank, and are adapted to support the material to be washed, and to provide for free upward travel of the water therethrough in the pulsations caused by the action of the reciprocating plunger hung below the screens. The screens are rigidly secured in position and are preferably arranged at a slight angle inclining downwardly from the ends toward the vertical center of the jig. A suitable wooden pendulum plunger is pivotally supported on a shaft and is adapted to reciprocate to produce a series of pulsations.

1,378,562—*R. E. Sayre*, Pittsburgh, Pa., May 17, 1921, assigned to Metals Recovery Co.

Flotation Process comprising adding to the pulp a small amount of aldehyde condensation product.

1,383,321—*F. E. Marcey*, Salt Lake City, Utah, July 5, 1921.

Flotation Apparatus of the type employing porous or canvas bottom. The objections inherent in such a bottom are overcome by having not only a clear opening for the passage of the air through, but being provided also with means for preventing clogging of the opening. The air plate is provided with openings and reciprocating pins passing therethrough, and spaced from the walls to form passage ways for the air, and cleaning rings on the pins normally positioned outside the opening, the diameter of the rings being sufficient to rub the walls of the openings and thereby clean the walls with a movement of the pins.

MONROE GAS FIELD'S RESOURCES HARDLY TOUCHED

CONCLUDING an investigation requested by Governor John M. Parker, the U. S. Bureau of Mines has made a report on the Monroe gas field, embracing the parishes of Ouachita, Morehouse and Union in northern Louisiana. The report describes existing conditions and estimates the amount of gas in the sands. These estimates, based upon measurements at eight ounces per square inch above atmospheric pressure, indicate the presence of 4,750,000,000,000 cubic feet of gas.

The report states that approximately 9,000,000,000 cubic feet of gas have already been withdrawn from the reservoir, but that still there has been no noticeable decline in the rock pressure, which still measures about 1,050 pounds to the square inch. An area of 212 square miles with an average sand thickness of at least 50 feet is regarded as proven by wells already drilled.

H. W. Bell and R. A. Cattell, petroleum engineers of the Bureau of Mines, prepared the report. The report also discusses wells which have gotten beyond control and methods for repairing them, as well as protecting the field against unnecessary waste in the future. The carbon black industry, and the possibility of using the gas for domestic purposes in large cities, as well as the possibility of generating electricity, are also discussed.

The state of Louisiana helped bear the expense of the investigation.

TRAP-ROCK ACCIDENTS—Trap-rock quarries of the United States employed 4,951 men in 1920, an increase of 221 or 4½ percent as compared to the previous year, according to Bureau of Mines calculations. Employees averaged 232 working days. Ten workmen were killed and 799 injured in accidents. These figures indicate a fatality rate of 2.61 and an injury rate of 208.89 per thousand men employed, based upon a standard year of 300 days, as against corresponding rates of 2.56 killed and 186.47 injured a year ago. New Jersey led all other states with 1,090 men employed, followed by Massachusetts with 885, Pennsylvania 752, Maryland 727, New York 631, and Connecticut 450. Nonfatal injuries were distributed as follows: Pennsylvania 194, Maryland 146, Massachusetts 121, New Jersey 114, Connecticut 92, and New York 49.

Col. Alfred H. Brooks, expert on Alaskan mineral problems, sailed for Seward August 12. M. G. Gulley spent the first two weeks of August visiting producing fields and examining geologic structures at Elk Basin, Wyoming, and Cody, Greybull, Thermopolis, Lander, Kemmerer and Rawlins, after which he returned to Casper. L. C. Mosburg went to Eldorado, Ark., early in August to finish work in the Eldorado oil field begun by W. W. Rubey in May.

INDUSTRIAL NOTES

The Automatic Reclosing Circuit Breaker Company of Columbus, Ohio, has engaged the services of Ralph R. Rugheimer, who will be responsible for its activities in the coal fields of Eastern Kentucky, Virginia and Southeastern Ohio.

B. G. Dann, who for the last four years has been connected with the engineering department of the Truscon Steel Company in Youngstown, Ohio, and New York City, has resigned to accept a position as manager of the New York office, 30 Church Street, of the Hendrick Mfg. Co., makers of perforated metal screens, elevator buckets, general sheet and light structural work, also light and heavy steel plate construction. Mr. Dann is a graduate of the Engineering Department of Lafayette College. B. G. Shotton is the Manager of the Pittsburgh office of this company, located in Union Bank building.

A recent bulletin of the Jeffrey Mfg. Co., calls special attention to the very latest feature of the straitflo fan, that of roller bearings. These bearings are self-aligning, mounted on heavy cast iron pedestals insuring continuous operation at the highest speeds without vibration.

Both bearings are mounted on the outside of the fan wheel, enabling an attendant to examine same without going into the air course. This is a very desirable feature where the fan is installed at a shaft mine, boosting purposes or even drift mines, as it eliminates doors, by-passes, and at the same time permits a support for the shaft on each side of the pulley.

MINES TO RECEIVE CREDIT FOR WATER SHIPMENTS

WATER CARRIERS have been instructed by the Interstate Commerce Commission to hereafter prepare freight commodity statistics similar to those now prepared by the railroads. These statistics include the segregated totals of the products of the mines, the forests, agriculture, animals, and manufactures and miscellaneous. The orders are retroactive and take effect as of the beginning of the current calendar year.

CLAY PRODUCTION.—The value of clay products marketed in the United States in 1920, accoring to the U. S. Geological Survey, aggregated $364,220,000, the highest amount on record. These figures show an increase of $103,430,000 over 1919, of approximately $144,000,000 over 1918, and of nearly $200,000,000 over 1910. Most of the increase was due to the increased cost of production, which reached its peak last year, although the quantity of many clay products was greater last year than the year preceding.

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THIS edition carries the advertisements of the leading manufacturers of mining machinery and equipment. They are entitled to your careful consideration. The advancement of the industry is of paramount importance to them, as it is to the operator. This is evidenced in their generous support of our organization, through The Mining Congress Journal. We wish to take this means of expressing our great appreciation of their support, and to ask that our members keep in mind that, all things being equal, those who cooperate with us in our work are entitled to their first consideration.

THE AMERICAN MINING CONGRESS.

W. J. LORING,
President, The American Mining Congress
1920-1921

The

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"PAY BACK AND WORK BACK"

THE WAY TO PROSPERITY was definitely pointed out by two high officials of the federal government in addresses delivered on Labor Day. Miners, farmers, manufacturers, traders and laborers may all profit by reading and interpreting and applying in their business the common-sense preachments of Vice President Coolidge and Secretary of Labor Davis.

The Vice President, speaking at the celebration of the one hundred and fiftieth anniversary of the founding of Williamsburg, Mass., said:

"Economic success will be found, not in resisting, but in obeying economic laws.

"It may seem at first glance a hard and cruel doctrine that the government cannot take from the people the burdens and the responsibilities of existence, . . . but in America the government does not make business. It can assist, it can open opportunity, but here the people of the nation make the business of the nation. All that can be done by the states or the federal government will be in vain without a proper attitude on the part of the people. No power on earth can immediately restore pre-war conditions. The only way to come back to them is to pay back and work back."

An equally eloquent plea for a revival of the gospel of work was made by Secretary Davis, who said:

"This nation has become the greatest of all producing nations. It has become so great because it works—because it always has worked.

"Just now we are in the depths of a depression. Everybody is interested in the way out. And we have made up our minds that the way to prosperity is to work. Just now work is more important to us than anything else.

"Labor Day this year calls everybody to work. The work to be done is to improve the present situation, and anybody can take a hand.

"The business leader must work to start the wheels of industry going again, and bid farewell to wartime profits.

"The toiler must work among his kind for the creation of a spirit willing to say good-by to unreasonable demands.

"The banker must work to provide credits for the re-establishment of business. The skilled engineer must work to cut down costs.

"There is that kind of work for every man, woman and child in the country. We must labor to build up the old spirit of confidence in our people."

The Vice President and the Secretary have risen to eminence and positions of great usefulness to their fellow men by practicing all their lives the doctrine they are now preaching. Secretary Davis as a day laborer never worried about a little overtime, and he didn't stop with eight hours work when as a member of the Cabinet he went to Chicago and prevented a strike which threatened to cut down the world's food supplies. Calvin Coolidge was a poor boy, but hard work made him governor of one of the greatest states and today he is not afraid, in addition to performing the particularly laborious functions of his own office while Congress is in session, to carry the burden of being a Cabinet member without portfolio. The wide experience and broad viewpoint of Vice President Coolidge and Secretary Davis commends their Labor Day utterances to all bona fide seekers after a return of real prosperity.

No one wants to see wages cut below the living point, but a wartime wage is not a living wage. No one wants to see business conducted for less than a just and reasonable profit, but wartime profits are no longer just or reasonable. It is better to operate upon diminished profits than to close up shop, better to work longer hours or for diminished wages than to be idle. Neither the profiteering employer nor the profiteering employe can travel very far or very fast on the road to prosperity. No one will give them a lift, and when they fall no one will pick them up. The merchant and manufacturer who refuse to deflate their prices, the railroad which cuts wages and then declines to meet shippers half way, the mine workman and the printer and the carpenter who insist upon less and less work and more and more pay are equally wrong, equally un-American, equally behind the times and equally in the way. It is time for them to get out of the middle of the road and make room for those who realize that the way to prosperity is labeled, "Pay back and work back."

ARMED GUARDS

THE SMOKE SCREEN IS NEW, but its basic principle is old and its use is by no means restricted to nations at war. We see it resorted to every day and it is a preferred weapon among disputants who have the misfortune to be on the wrong side. In ordinary parlance it is called "beclouding the issue," "dodging the question," or "setting up a straw-man."

Just now the favorite stratagem of the agitators, both of the professional and the parlor variety, is to inveigh against the employment of armed guards to protect private property, especially during labor troubles. Following the recent insurrection in West Virginia, the Washington legal representative of the so-called strikers gave out an interview in which he said:

"The dominant reasons for the outbreak are to be found in the perpetuation of the armed guard system in the state."

He then complained bitterly that the coal operators had employed private detectives and paid the salaries of deputy sheriffs. Other apologists for the disturbers insisted that they should be permitted to retain their arms so long as the members of the state constabulary carried weapons.

It is all a smoke screen, a palpable attempt to dodge the question, to becloud the issue, made with the insolent assumption that the public is simple-minded enough to be led away from consideration of the facts and issues actually involved. It is as if a band of I. W. W.'s, frustrated in their attempts to fire a wheat field or wreck an ordnance plant, should complain that blood was shed only because the wheat field and the ordnance factory were protected by armed guards. No court of law would countenance such a pleading or squander its time by considering it for one minute, and neither will the court of public opinion give ear to such a whining, hypocritical plea in the case of industrial disturbances. The public will kick the straw man out of the way, go behind the smoke screen and lend the weight of its support to the forces of law and order.

No valid objection can be raised to the employment of armed guards. The only argument ever advanced against the practice is that ample protection to life and property should be provided by the constituted authorities. But this argument is pointless because it is a theory only and no theory ever yet dismayed a thief or frustrated a burglar or turned back a mob bent on destruction. A guard is a watchman, nothing more and nothing less. Watchmen are generally armed. Their employment is universal and sanctioned by law and custom and public opinion. Every towering office building, every large apartment house has its armed guard, or watchman. Every bank, every large hotel, every baseball park and every department store employs private detectives, or armed guards, who are generally either sheriff's deputies or members of the police force and who receive salaries from the persons and firms whose property they protect. The bank messenger, jeweler's clerk and broker's agent carrying through the streets a satchel filled with valuables is often accompanied by armed guards, although there are policemen on every corner. Railroads maintain extensive secret service departments.

In every city in the land merchants club together and employ armed watchmen to make the rounds of their stores at regular intervals during the night, thus securing a greater measure of safety than that which the municipality provides. In the city of Washington, which certainly is as civilized as any municipality on earth and which has an exceptionally capable police department, the national government stations armed guards in its own buildings, despite the fact that the government pays its just proportion into the city's treasury and receives therefor all the protection afforded to citizen taxpayers. The American Federation of Labor has in Washington a magnificent office building known as the "labor temple," and this temple is guarded every night by a special policeman who holds a commission from the District of Columbia which empowers him to carry arms. This is the same "labor temple" wherein are maintained the offices of President Samuel Gompers and the head of the Mining Department of the American Federation of Labor, who object so strenuously to the employment of armed guards at the mines. And the attorney quoted above as attributing all the trouble in West Virginia to the employment of armed guards maintains his own office in one of Washington's marble skyscrapers which is protected by privately employed armed guards both day and night.

Private employment of armed guards has always been customary wherever there is valuable property to protect, irrespective of the character or location of the property. The taking of such precautions can in no wise be regarded as an offense against honest citizens, for they are purely defensive measures aimed only against persons bent on robbery, arson or other destruction. No thinking man would ever suggest that armed guards be withdrawn from banks, express offices, and diamond shops, or that the use of private detectives be forbidden at race tracks and in stores, hotels, and theaters, for he would know that by so doing he would give just cause for questioning his sanity or his honesty. And when labor agitators rail against the employment of armed guards, especially during strikes, they lay themselves open to suspicion. Either they must admit that their intentions are not of the best, or confess that they hope to deceive the public.

Can it be that the agitators believe that the taking of protective measures is justifiable only when industrial peace reigns and everybody is happy, but that mine guards, private detectives and state constabularies should be discharged upon the instant that a strike, lock-out or "vacation" is proclaimed? Or can it be that they believe the American Federation of Labor and attorneys for outlaw coal mine workmen should be permitted to employ private detectives, but that mine owners, railroads and others with valuable property should not? If so, their credulity is pitiable. The American public would never approve such injustice, never countenance such insanity.

There will come a time, of course, when watchmen will no longer be employed; we cannot say exactly when. We are not sufficiently versed in theology to predict the date of the millennium.

CO-OPERATION THE ESSENTIAL FACTOR

AMERICAN INDUSTRY is facing a period of unprecedented competition. Every returning traveler brings reports of the speeding up of the German industrial machine—and every seaport in this country furnishes evidence of the ability of European manufacturers to place products in the American markets at prices below the domestic costs. Efficiency in production must be the watchword of American producers if our industries are to maintain a continued development.

The effective mobilization of American industry during the war indicated the possibilities of standardized methods, and coordinated efforts. The demobilization of industry after the war furnished the best evidence of the dangers of the failure to provide for a continuance of co-operative effort, and of establishing teamwork between the basic factors in industrial progress.

During the last eighteen months there has been a continual conflict between labor and the employer, between the carriers and the shipper, and in many industries there has been a cut throat competition resulting in industrial demoralization between individual producers. Such conditions if continued will inevitably result in the failure of American industry to meet present day conditions, and no amount of protection or government assistance can prevent the stoppage of production and the cutting down of plant capacity.

Realizing these facts which are particularly applicable to the mining industry the American Mining Congress at its Twenty-fourth Annual Convention will devote a considerable part of its program to the development of teamwork and co-operation between the mine producer, the manufacturer of mine equipment, and the railroads in the hope that through such co-operation a constructive program can be created which will be of far-reaching benefit both to the industry and to the nation.

If American industry is to effectively meet world competition—provision must be made under wise and far-sighted regulation for co-operative effort in the continued production and distribution of products.

By intelligent analysis of the difficulties, by harmonizing divergent opinions, and by co-operative thought, followed by vigorous initiative the American Mining Congress through the conferences and discussions at the Convention hopes to see the formulation of a platform which will inaugurate a new era of mine production and of National prosperity.

THE HIGH STANDING OF THE FOURTH ESTATE

A UNIQUE TRIBUTE TO THE PRESS was contained in the report made to the War Department by Brig. Gen. H. H. Bandholtz, to whom was entrusted the pacification of the coal mining counties of West Virginia. As the climax to his recital of the circumstances which led him to believe there would be no further disorder, and in support of his recommendation that martial law be not declared, he said:

"Many newspaper correspondents are leaving, which would seem to indicate they consider the situation no longer menacing."

It is a far cry from Kitchener, who contemptuously included the correspondents in an order sending all "camp followers" to the rear, to Bandholtz, who as the general in supreme command makes known his reliance upon the good judgment of the representatives of the press in the most serious situation which has arisen in this country since the Civil War. But the world has advanced in the last few decades and the press has been out in the forefront of the procession of progress showing the way to others.

The statement of Bandholtz was more than a tribute, which might easily amount to nothing more than a compliment or a mere bouquet. It was an acknowledgment of the breadth of observation, ability for making deductions, precision of interpretation and absolute reliability of the modern newspaper man. It constituted a formal recognition of the high standing of the Fourth Estate, bestowed with all the dignity and seriousness which marks the conduct of state affairs. As such it was undoubtedly intended, as such it will be received and as such it was altogether deserved.

RAILROAD RATES AND POTENTIAL TONNAGE

UNDER GOVERNMENT REGULATION and management, the trend of railroad rate revision was constantly upward and transportation rates were increased until the burden upon the great mining and manufacturing enterprises of the country, which furnish the major portion of the tonnage hauled, reached enormous proportions.

Recent reports indicate that the high rates now in effect are more than the traffic will bear, and that instead of yielding larger revenues to the carriers they have resulted in a loss of revenue because many industries which formerly were large shippers are now unprofitable. This is true particularly in the case of mines containing large quantities of low grade ores. High railroad rates, high taxes, and lack of tariff protection have compelled these mines to either close down or confine their operations to the production and exhaustion of their highest grade minerals, or surface ores, thus making impossible in many instances the future development and recovery of the low grade product. This situation is not only lessening the volume of present tonnage, but is seriously impairing potential tonnage of the ore carriers.

The density of traffic in the mining regions and thickly populated sections of the country makes possible the maintenance of adequate service for the agricultural districts and sparsely settled localities where the volume of traffic is comparatively small. It is, therefore, of vital importance to the railways of the country not to maintain a rate level which results in the loss of potential tonnage; and now that the roads have been returned to private management it is essential for their owners to plan wisely in the development of a policy for the future which will secure not only the adequate maintenance of existing lines, but provide for increased facilities which will stimulate the growth and keep pace with the requirements of our commerce. This program can be accomplished only through the adoption of a policy of general revision downward, especially of rates on the raw and finished products of natural resources, which will help to encourage the extraction and utilization of low grade ores simultaneously with the mining of the high grade ores. Lower rates will tend to increase the present and potential ore tonnage of the railroads and thus will stabilize and augment future earnings.

THE MINING CONGRESS JOURNAL

WE HAVE NO COMPETITOR. THE MINING CONGRESS JOURNAL is one of the comparatively few important publications which can say to others who serve the same field that it wishes them well. We admit—even boast—that other mining publications are of the very highest calibre and congratulate them upon their growing influence. Our interests are mutual.

In America, where organized effort has reached its highest stage of development, a knowledge of current events is a pre-requisite to successful endeavor. Hence the development of the daily newspaper, chronicling the happenings of the preceding twenty-four hours and making appropriate comment thereon. From the daily newspaper, serving the whole public and of necessity restricting its contents to matters of general interest, it was a normal and natural forward step to the weekly and monthly magazine prepared especially for those engaged in identical lines of business or in similar arts, sciences and professions. There are printed in America more and better agricultural, religious, fraternal, scientific, and trade and class periodicals than in any other country. The trade and class publications alone number more than 5,000 and their circulation runs into the millions.

The trade and professional mining publications devote their pages to the discussion of scientific matters, or to the news of limited territories or of some particular branch of the mining industry. THE MINING CONGRESS JOURNAL interprets the economics, the national phases of the business side of mining, and mirrors official Washington to the entire industry. The business of mining is directly and peculiarly sensitive to every enactment or repeal of national legislation or even the suggestion thereof, and to every administrative order entered or revoked at Washington. The industry must needs be kept continually informed, and the function of THE MINING CONGRESS JOURNAL is to meet this need. No other mining magazine has for its primary object the dissemination of Washington news or the news of the American Mining Congress and its chapters. THE MINING CONGRESS JOURNAL does not duplicate. Our field is exclusive; our mission, imperative. Now that the public is beginning to realize that mining is fundamental to the nation's prosperity, this field must be covered more intensively, this mission must be fulfilled all the more faithfully. The industry stands in need of all the scientific data, all the political and economical information, all the constructive publicity it can get.

THE MINING CONGRESS JOURNAL is gratified to feel that its efforts will be made in co-operation, not in competition, with the scientific press, which will continue to render in the technical field a service of inestimable magnitude. There is room for all, work for all. Our interests are mutual.

BUSINESS CONDITIONS IMPROVED

THE TIDE HAS TURNED. The good ship Prosperity, after floundering about so long in uncharted stormy seas, is headed straight for shore and ready to make a landing upon signal from port.

In referendums conducted by two great daily newspapers, the Cincinnati *Times-Star* and the Philadelphia *Public Ledger,* men whose abilities and facilities for surveying the situation accurately are unsurpassed expressed their belief that business had already passed through the valley of depression and was on the up-grade. Their statements were sufficiently at variance to mark them as having been given in good faith, sufficiently in agreement to indicate a prevailing view of healthy optimism.

The award of Judge Kenesaw Mountain Landis promises to eliminate stagnation in the building trades and relieve the housing situation. Its effects will be national, as it will put thousands of men to work and renew their purchasing power.

The recent rise in the cotton market is one of the most hopeful signs of the entire year. Thirteen states have been lifted out of near-bankruptcy and supplied with the wherewithal for purchasing wheat, corn, fruit and other raw commodities from the west and manufactured articles from the east. This one favorable turn of the market will benefit every part of the country.

Tax legislation has progressed to the point where business at least knows its profits will no longer be confiscated. Shipping Board problems have, in a way, been solved. Money is easing up. The Federal Reserve Board regularly sounds encouraging notes in its official pronouncements. Passage of the funding bill or adoption of some other government measure for relieving the financial embarrassment of the railroads apparently is assured, presaging wide-spread resultant activity in other lines. A renewal of railroad buying on the old-time scale will mean employment for thousands of laid-off men; the purchase of lumber, iron, steel and coal, entailing a resumption of activity in these and connected industries.

The mining industry, always alert, always sensitive to changes in other lines, will come in for its share of the enlarged business which now seems inevitable. It could not be otherwise, for mining is a basic industry and its products are indispensable alike to the manufacturer, the jobber, the retailer, the railroad and the consumer. Silver-lead mining will be the first to feel the change; zinc will come next and the other minerals will follow. Six months should find the great American mining industry again in the heyday of prosperity—not, of course, the inflated kind of prosperity which the war brought, but the solid, well-grounded, lasting prosperity which the country knew in former years and which, when once re-established, may reasonably be expected to continue for many years to come.

As Postmaster General Hays so tersely put it, prosperity is already on the road for those who will go out and meet it.

THE GOLD CONFERENCE

ALL GOLD PRODUCERS will be particularly interest ed in the letter written by Senator Tasker L. Oddie of Nevada to Secretary of the Treasury, Andrew W. Mellon, on August 17 and the gold resolution signed by twenty-two senators which are published elsewhere in this issue. While awaiting the detailed reply of Secretary Mellon, no proposal for the relief of the gold mining industry could properly come before the gold conference at the forthcoming annual convention of the American Mining Congress, but a report will be made detailing the activities of this organization in behalf of he gold mining industry.

GUILTY

THE BLACKEST PAGE in the history of union labor was written in West Virginia during the last week of August and the first few days of September. No amount of explanation or protestation can wipe it out; neither sophistry nor misrepresentation can explain it away. The United Mine Workers is responsible for the break-down of the government of a sovereign state, for an assault upon the flag and the constitution and for the death of uniformed soldiers and inoffensive citizens.

There is no strike in the non-union counties in West Virginia, and never has been. There is no controversy between the workmen and the employers, and never has been. When the international organizers for the U. M. W. of A. went into the field a majority of the workers refused to have anything to do with them. They remained at work, have been and are still at work and ask only that they be permitted to continue at work. The mines are fully manned and their production is the highest in the world. The insurrectionists have no more right to demand jobs in the mines of West Virginia than in the oil fields of the west, in the iron mines around Lake Superior or in the plants of the United States Steel Corporation.

Of the few who looked with favor upon the initial attempt to organize a union, a few quit their jobs and others were discharged for offensive conduct. Men who walk out or are locked out and join a union afterwards cannot be called strikers, but it was they and others who never worked in the affected field who carried death and destruction into Logan County. They were outsiders, aliens who sought to drive out the inhabitants and possess themselves of the land, and they had exactly the same justification for their conduct that the Moorish hordes had for invading Spain, that the Tartars had for over-running northern Europe and that the Germans had for blasting their way through Belgium.

While the trouble in Logan County was at its height, the president of the American Federation of Labor and the head of the federation's mining department called upon President Harding and asked him to call a conference of the union and the operators. The president of the United Mine Workers of America in a public statement made a similar request. President Harding will not call the conference. The operators have no need for the services of the union. Under the laws and the constitution, the union cannot force its services upon them. Hence there would be nothing to talk about.

But there is one conference which should be held, and at which there would be a great deal to talk about and a great deal to be done. That should be a conference of the executive board of the American Federation of Labor, called for the purpose of receiving a report to the effect that the United Mine Workers of America have expelled every officer and member who participated in the West Virginia insurrection and will co-operate in their prosecution in the criminal courts. If this report is not forthcoming, then the Federation of Labor should expel the United Mine Workers of America.

Those who aid and abet in the commission of a felony are equally culpable with the principal. Unless organized labor promptly disavows the murder and insurrection committed in West Virginia, it will be called to account before the court of public opinion and the verdict will be, "Guilty."

D. F. KELLY
General Manager, Mandel Bros.

FRANCIS S. PEABODY
Chairman
Chairman of the Board, Peabody Coal Company

H. C. ADAMS
President, Peerless Coal Company

E. C. SEARLS
President, Crerar, Clinch & Co.

C. M. MODERWELL
Vice President, O'Gara Coal Company

The Chairman and Members of the
ILLINOIS COMMITTEE ON ARRANGEMENTS

C. D. CALDWELL
Vice President, By-Products Coke Corporation

H. H. MERRICK
Treasurer
Vice President Central Trust Co.

DON B. SEBASTIAN
Vice President, Bickett Coal & Coke Company

D. W. BUCHANAN
President, Old Ben Coal Corporation

DR. F. C. HONNOLD
Secretary, Illinois Coal Operators' Association

STUYVESANT PEABODY
President, Peabody Coal Co.

The Treasurer and Members of the
ILLINOIS COMMITTEE ON ARRANGEMENTS

The Exposition Chairman and Members of the
ILLINOIS COMMITTEE ON ARRANGEMENTS

Members of the
WAYS AND MEANS COMMITTEE

G. E. MARBLE
Chairman
General Electric Company

G. A. BINDER
Ohio Brass Company

A. H. BENEDICT
Goodman Manufacturing Company

J. L. CANBY
Chicago Pneumatic Tool Company

JOHN M. GLENN
Secretary, Illinois Manufacturers' Association

D. G. JAMES
Railway & Mine Supply Company

Members of the
EXHIBITS AND INSTALLATION COMMITTEE

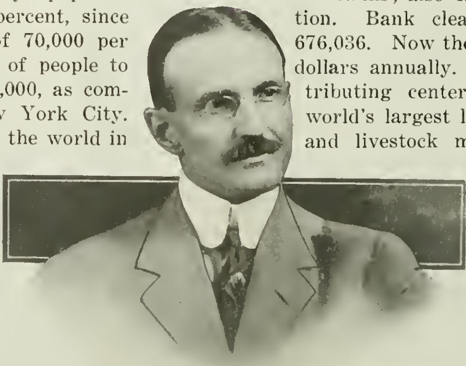
CHICAGO *The 1921 Convention City*

DELEGATES to the 1921 convention of the American Mining Congress will visit one of the wonder cities of the world. Chicago in 71 years has grown from a town 14 miles in area to a metropolis covering 200 square miles, and in population from 28,269 to 2,701,705. Including its suburbs, themselves large enough to rank as cities above the average in size, Chicago's population is well above 3,000,000. The city's population has increased by 700,000, or 32 percent, since 1900, or an average gain of 70,000 per year. The average number of people to the square mile is about 11,000, as compared with 130,000 in New York City. Chicago is the fourth city in the world in size, and the second in the United States.

Chicago is the largest industrial city in the world. It has within its manufacturing zone over 20,000 factories with an output in 1919 worth more than $4,000,000,000. In 1860 the city's output was valued at $20,000,000. Chicago has the largest number of skilled mechanics in the world.

Chicago is the largest railroad center in the world. Its system of belt lines comprises one-third of the total in the United States. Thirty-nine roads enter the city and a train leaves every minute. Twenty-five hundred through package cars leave the city daily for 1,800 primary destinations. Every passenger train carries 133 passengers a minute, making 192,000 who arrive and depart daily. Seventy million people come and go to and from Chicago annually.

Chicago has an annual vessel tonnage of 15,000,000 tons, 101 miles of water frontage for the handling of its water borne commerce, of which 52 miles are equipped with dock and railway facilities. Its outer harbor has a frontage of 24 miles. The chief business of the Chicago River is the transportation of lumber, coal and package freight. From the Calumet River are served the many industries of South Chicago, East Chicago, Indiana Harbor and Gary by rail connection. Around this port are grouped steel mills, furnaces, smelters, forging plants, foundries and grain warehouses. The lake commerce of 1920, considering receipts alone, included the following products of the mines: hard coal, 736,976 tons; soft coal, 686,638 tons; iron ore, 6,496,034 tons; salt, 76,900 tons; manufacturers' iron, 13,721 tons; limestone, 1,448,855 tons.



JOSEPH R. NOEL
President, Chicago Association of Commerce. The Association has given valuable co-operation to the Convention management and the Illinois Committee on Arrangements

Although Chicago is an inland city, in one year merchandise valued at more than $18,000,000, pass through its custom house on which $4,695,984 was collected as duty. Chicago's surface transportation lines number 172, and they use more than 1,000 miles of track and 575 transfer points.

Chicago has 98 savings and state banks, 10 trust companies, 34 trust and savings banks and 25 national banks; also 422 theaters of every description. Bank clearings in 1876 were $810,676,036. Now they are well over thirty-billion dollars annually. Chicago is the jewelry distributing center of the world and is the world's largest lumber market, grain market and livestock market. The city's packing houses in 1919 killed 8,359,895 hogs. Chicago is the world's center for the manufacture of electrical and gas devices. Its famous Art Institute has a larger membership and in 1920 had a larger attendance than New York's Metropolitan Museum of Art.

Chicago has 2,112 miles of paved streets and the greatest number of small parks and playgrounds of any city in the world. In 1850 the city had seven schools, thirty-five teachers and 3,000 pupils. In 1919 there were nearly 300 public schools, 8,883 teachers and 404,275 pupils. Its public schools consist of 264 public elementary schools, 25 public high, one junior college, one continuation and one normal school. Its other educational institutions consist of 202 parochial elementary schools, 22 parochial high schools, 12 Roman Catholic co-educational colleges and academies and 25 Roman Catholic academies for girls. There are also six colleges and universities, 97 music schools and nine law schools.

The city's public properties are valued at $118,570,291, and its postoffice handles the largest amount of parcel post matter of any city in the world. The Chicago Municipal Pier, extending 3,000 feet into Lake Michigan and costing $5,000,000, not only indicates the city's preparedness to handle an increased volume of lake traffic, but is also a remarkable recreational center.

Delegates to the Mining Congress Convention and visitors to the National Exposition will, of course, go to Chicago primarily for business. But hundreds of them have arranged to arrive a few days beforehand, in order to inspect some of the city's industrial establishments, make a tour of its boulevards and view its places of unsurpassed beauty.

TWENTY-FOURTH ANNUAL MEETING OF THE MINING INDUSTRY

EVERY STATE in the Union, and Alaska and Mexico, will be represented at the Twenty-fourth Annual Convention of the American Mining Congress, which will be held in Chicago, October 17–22. Headquarters will be at the Congress Hotel, the National Exposition of Mines and Mining Equipment will be held at the Coliseum, and general sessions and group meetings will be held at each place.

Every indication points to a notable gathering. Legislation, the general business situation and world conditions present problems of first importance to the nation and whose solution is vital to the mining industry. Mining leaders will gather around the council table to talk them over and lay plans for taking advantage of the opportunities which the next year is expected to offer.

There will be three divisions of convention actitities—the general sessions, the group sessions and the exposition. In arranging the program of the convention an effort has been made to bring out those themes for which concerted action is possible.

Co-operative organizations have proven their benefit to the agricultural producer, stabilizing the production and distribution of his products. Mine operators cannot co-operate in this way without violating federal law. The question of the benefits and disadvantages of co-operative effort in the production and distribution of mine products will be presented in Chicago, together with suggestions as to the possibility of modifying the organic law in such a way as to benefit both the public and the mine operator.

STANDARDIZATION—Standardization is the elimination of waste. Standardization was one of the essential factors which made possible the effective mobilization of American industry during the war. The continued development of mine production in the United States is largely dependent upon the development of greater economy in production. Standardization of mining methods, machinery and equipment is therefore a salient question for the mine operator. The National Conference on Standardization at the Mining Congress convention will present the work which has been done during the past three years by the Standardization Division of the Congress and will be of special interest to the mine executive.

TRANSPORTATION—The mining industry furnishes over sixty percent of all freight traffic. Transportation in turn is frequently the determining factor in the production and distribution of mine products. Freight rates are high, yet the railroads are still in a serious financial situation. Is it possible to develop a policy which will mutually benefit both of these industries? One session of the convention will be devoted to a discussion of this question, both from the standpoint of the railroads and of the mine operator.

NEW USES FOR METALS—If capacity production in a number of the basic metal mining enterprises is to be maintained in this country a greater use of metal products must be developed in the domestic markets. This is a subject which affects the interest of every metal producer. Intensive studies are being made of the possibilities for developing better marketing methods and new uses for metal products. The results of several of these investigations will be presented at the Chicago convention, and an opportunity will be given for a thorough discussion of the entire subject.

E. C. PORTER
Convention Manager, American Mining Congress

TAXATION—There is no subject of greater interest to the mine operator than taxation. The tax problem in the United States is the greatest barrier to increased business activity. This is true not only of federal taxation but also of state taxation. The question of mine taxation and of mine valuation is of vital importance to the mining industry, and the effective work which has already been done by the Mining Congress in preventing unfair and discriminatory taxation of mine production will be effectively supplemented and developed at the convention.

GOLD—As a result of the war the United States is now holding the gold reserves of the world. It is the only country on a strictly gold basis. In the depreciated currencies abroad is seen a latent threat to the gold standard. Furthermore, the production of gold as a result of high costs has been steadily decreasing. The question of protecting the gold standard, and of preventing a further decrease in our gold production, will form one of the important convention topics.

COAL—The coal industry is essential to our industrial production. During the last three years the coal operator has been subjected to continual abuse and misrepresentation. The coal industry stands in need of a wise, far-sighted policy representing the best thought in the industry. The formulation of such a policy and its presentation to the public would do much to bring about a greater understanding and appreciation of the problems which confront the coal operators. The sessions of coal operators will be among the largest and most important of the entire convention.

FOREIGN POLICY—The United States is no longer isolated. Our foreign relations have a direct affect upon the continued development of the mining industry. There are increasing opportunities for the utilization of American capital and organizing ability in the development of mining interests in all parts of the world. What is to be the attitude of the mining industry in regard to our foreign relations? The sessions devoted to the problems of our foreign relations in connection with the mining industry will be among the most important of the convention. There will be a number of special delegations from Latin-American countries present at the conferences on foreign trade and foreign policy.

PETROLEUM—Closely allied to the question of an American foreign mineral policy is the question of the maintenance of our petroleum production both at home and abroad. A special conference of oil producers will be held in Chicago, and these conferences will include a session devoted to the oil shale industry.

EDUCATION—The effective training of mining engineers, the vocational education of employes and the development of closer co-operation between the technical schools and the mine operator will be discussed.

EXPOSITION—One of the essential factors in the development of American industry has been the continued introduction of effective labor-saving machinery. Lower costs in mine production are necessary at the present time. Proper machine equipment is therefore indispensable. Two hundred representative manufacturers of mine machinery and mine equipment will have exhibits at the Chicago convention. The American Mining Congress has attempted in building up this exposition as an integral part of the convention to give to the mine executive the best opportunity ever afforded of studying the equipment which is so essential a factor in the future development and continued maintenance of mine production. In addition to the manufacturing exhibits, there will be many official exhibits, including a special exhibit of the oil shale industry by the Bureau of Mines. The Geological Survey, other government bureaus and numerous states will also have exhibits.

Two of the important exhibits in the central Plaza will be from Alaska and Mexico. Each of these countries offers almost limitless opportunities for mining development.

A special and more detailed article on the Exposition will be found elsewhere in this issue.

The Utah Chapter of the American Mining Congress, working in co-operation with Governor Mabey and Senator Smoot, has secured from the Postoffice Department permission to obtain the use of an airplane for making photographs of Utah mining camps to exhibit at the Chicago convention. The Mining Committee of the Salt Lake Commercial Club has taken an especial interest in the preparation of the Utah exhibit, having appointed a special committee composed of F. B. Cook, Charles Peters and Harry S. Joseph to render financial and other assistance.

The California exhibit is being prepared by Secretary William W. Thayer of the State Mining Bureau. Gold will be the main feature, specimens aggregating $50,000 in value being shown. Every mineral product in the United States except phosphate is found in California, so the state's exhibit will be a varied one. It will occupy 700 feet of floor space in the coliseum and will be in charge of Walter M. Bradley, statistician and curator of the state mining bureau. Governor W. D. Stephens will name California's five delegates.

California will display its mineral products at the American Mining Congress convention. The exhibit is being prepared by Secretary William W. Thayer of the state mining bureau. Gold will be the main feature, specimens aggregating $50,000 in value being shown. Every mineral produced in the United States except phosphate is found in California, so the state's exhibit will be a varied one. It will occupy 700 feet of floor space in the Coliseum and will be in charge of Walter M. Bradley, statistician and curator of the state mining bureau. Governor W. D. Stephens will name California's five delegates to the convention.

A majority of the delegates will arrive on Saturday, October 15, or Sunday, October 16. All day Sunday will be given over to registration. Delegates and visitors are urged to present their credentials at the registration desk immediately upon their arrival in order to secure tickets to the Exposition.

MINES BUREAU OFFICIALS ON LONG INSPECTION TRIP

DR. H. FOSTER BAIN, director of the Bureau of Mines, and other officials left Washington late in the summer for an inspection trip which will end with a visit to the American Mining Congress convention in Chicago. They first attended the National Mine Safety Meet at St. Louis, September 1–3, and thereafter left on the following intinerary: Rolla, Mo., Sept. 5; Joplin, Mo., 6 and 7; Kansas City, Mo., 8; Denver, Colo., 9-10 and 11; Casper, Wyo., 12; Basin, Wyo., 13-14; Billings, Mont., 15; Great Falls, 16; Butte, 17-18 with possible trip to Anaconda, 18; en route (stopping at Missoula) 19; Wallace, Idaho, and Spokane, Wash., 20; Moscow, Spokane, and Seattle, 22; Seattle, 23-24-25; Portland, 26; en route 27; Salt Lake City, and Ogden, 28-29; Reno, Sept 30, October 1-2; Oakland, October 2; San Francisco, 4-5; en route 6; Bakersfield, 7-8; Los Angeles, 9-10; Gila, Ajo, Tucson, 11; Tucson, 12-13; Houston, 14; Baton Rouge, 15; Shreveport, 16; Dallas, 17. From Dallas the return will be made via Urbana and Chicago, to arrive Chicago in time for the last two days, October 21-22, of the American Mining Congress convention.

HOUSE MINING CHAIRMAN MAKES TOUR OF THE WEST

FOR THE FIRST TIME in history, in all probability, a Congressional mining committee head is now making a tour of the mining districts of the country. Marion E. Rhodes, of Missouri, chairman of the House Committee on Mines and Mining, is accompanying the director and several officers of the United States Bureau of Mines on a tour of inspection which will include the bureau's field stations and offices, and is also visiting the mines and going underground.

Congressman Rhodes began his trip during the second week in September, when he went down into the lead and zinc mines of the Joplin, Mo., and Miami, Okla., districts. Notwithstanding the re-convening of Congress, he is still touring the western states, and will continue until the middle of the month, when he will go to Chicago to attend the Mining Congress convention. From there he will return to Washington.

THE SECOND NATIONAL STANDARDIZATION CONFERENCE

(Auspices Standardization Division, American Mining Congress)

I. Beginning of Movement and Development of Division

THE SECOND NATIONAL Standardization Conference has been called in conjunction with the Twenty-fourth Annual Convention of the American Mining Congress and the National Exposition of Mines and Mining Equipment, at the Coliseum and the Congress Hotel, Chicago, October 17–22. The First National Standardization Conference was held in conjunction with the Twenty-third Annual Convention of this organization in Denver, Colorado, last year.

The growth of the Standardization Division has been most gratifying. This work was begun two years ago with a small voluntary committee. For a number of years previous to that time the American Mining Congress included among its committees two small committees on the standardization of electrical equipment in coal mines and in metal mines. This work was carried on for several years and several reports were made.

The American Mining Congress, in its efforts to do those things which it has felt would benefit the mining industry, undertook the organization of a National Standardization Committee. The first meeting of this committee was at the St. Louis Convention in 1919. So much interest was aroused on the subject at that time that the chairmanship of the Coal Mining Committee was extended to Col. Warren R. Roberts, president of Roberts and Schaefer Manufacturing Company, of Chicago. Under his leadership the coal committee grew to such proportion that it was decided to organize a Metal Mining Committee, and form a division of the national organization. Chas. A. Mitke of Bisbee, Arizona, accepted the chairmanship of the metal committee. This division of the American Mining Congress is now composed of two branches—the coal mining branch and the metal mining branch. Each of these branches is divided into seven sections, and in addition to these an Advisory Committee on Safety Work was appointed.

With the exception of that done by government departments, such as the United States Bureau of Mines and the Bureau of Standards, no general work had been done on the standardization of mining methods, practice and equipment, until the American Mining Congress organized this division.

It was found as the work progressed that there might be duplication of effort in the work of those interested in the standardization of mining equipment. To avoid this duplication there has been organized what is known as the General Correlating Committee, under the auspices of the American Engineering Standards Committee. This general committee is composed of the American Mining Congress, the United States Bureau of Mines, the National Safety Council, the American Institute of Mining & Metallurgical Engineers, the American Institute of Electrical Engineers and the Associated Companies. Dr. E. A. Holbrook, assistant director of the Bureau of Mines, is chairman of this committee. Several meetings have been held at the Engineering Standards Committee headquarters in New York and the work is now being conducted in the most comprehensive and thorough manner, and duplication of effort is impossible.

The function of this committee as agreed upon at the various conferences is that it will suggest to the American Engineering Standards Committee the subjects for standardization, recommend sponsors to define the scope and limit of proposed standards, assist in adjusting conflicts or clearing up ambiguities, follow up work under way, and report from time to time upon progress made within the field of these activities.

The year 1921 marks splendid advancement in the work of this division. Aside from the formation of the General Correlating Committee, each of the branches has in process the organization of a section on welfare work, and to the metal mining branch has also been added a committee on mine cost accounting of which T. O. McGrath is chairman.

Standardization, the elimination of waste, is one of the most important questions before the mining industry.

The work already accomplished has received the endorsement and cooperation of those associations working along the same lines, and at the second national conference it is proposed to still further consolidate this work. Early in the year the matter of further enlarging the work by the appointment of a mining engineer as chief of the Division, was presented to leading manufacturers and operators. The responses have been most gratifying, and it is possible that within the coming year this plan will be carried out.

There are approximately 160 members of the Standardization Division, each man especially fitted for the work he has in hand by his large experience in matters of this kind. We expect each of the 160 members to be present at the Chicago Conference. In addition, invitations have been extended to practically 2,000 coal and metal operators, asking their special assistance in having present some representative of their company. A similar number of invitations have been extended to the manufacturers of mining equipment and supplies. It is anticipated that there will be large delegations from the various state universities which are considering standardization, from the government departments and the national associations working in conjunction with this division.

Some of the most important addresses of the Twenty-fourth Annual Convention of the American Mining Congress will be delivered to the Standardization Division section.

Dr. Horace Sechrist, Director, Bureau Business Research, Northwestern University, Evanston, Ill., will speak upon "Statistical Standards in Business Research; Dr. P. G. Agnew, Secretary of the American Engineering Standards Committee, New York City, will give a Review of International Standardization. Dr. Agnew has but recently returned from a several months' trip abroad, in the interest of international standards; Dr. H. Foster Bain, Director, The United States Bureau of Mines, will address the conference upon "Government Interest in Standardization for the Mining Industry;" S. J. Williams, of the National Safety Council, will speak upon "Safety and Standards"; C. R. Thomas, will present a paper upon "Standardizing Research Results Through Publicity"; Dr. E. A. Holbrook, Chairman of the General Correlating Committee, and Assistant Director of the United States Bureau of Mines, will speak upon "National Co-ordination of Standardization Through the General Correlating Committee. The program is not yet complete and many other interesting papers will be presented, not the least among which will be those prepared by Colonel Warren R. Roberts, Chairman of the Coal Mining Branch of the Standardization Division of The American Mining Congress, and Charles A. Mitke, Chairman of the Metal Mining Branch. Mr. Mitke is recognized as an eminent authority upon the subject of "Standardization."

The first meeting of the Standardization Division will take place on Monday, October 17, and meetings will continue until Saturday, October 22. Thursday evening has been turned over by the convention management to the Standardization Division, when this subject alone will be discussed, both from the national and the international standpoint.

Chairman Roberts and Chairman Mitke each will present a general report of the progress of their branch and the chairmen of the various sections will render reports which will be the basis for discussion.

The coal mining branch of the Standardization Division has been in existence one year longer than the metal mining branch. At the convention last year Mr. Mitke's committee had but been organized and little progress had been made in the development of its work. However, due to his earnest effort, rapid progress has been made in the work of the Metal Branch and it is anticipated that much interest will be aroused by the reports to be made from the various sections of this branch of the division.

There have been two changes in the Coal Mining Branch. George R. Wood, who has been chairman of the drainage section, was compelled to resign on account of the necessity for his removal from the West Virginia field to Colorado, and E. D. Knight, of the Cabin Creek Consolidated Coal Company, accepted the chairmanship of this section. For a considerable time Col. Roberts acted as temporary chairman of the Committee on Outside Coal Handling Equipment. The chairmanship of this committee has been accepted by Dr. Henry Mace Payne of Andrade-Eyre, Inc., New York City.

In appointing the chairmen and members of the various sections, every effort has been made to make an impartial selection and have every large mining district and the manufacturers of specialized mining equipment well represented, so that the best talent and experience in the profession will be available and at the command of the committee when the actual work of standardization begins.

The committees are all organized with a view to including the mining operator, the manufacturer of mining machinery and equipment, the United States government and those technical societies which are interested in the development of the standardization movement. The chairmen of the sections are men who are vitally interested in the operating end, or are men who have done considerable original work as mining engineers. We believe that our readers will be interested in having the personnel of these various sections for later reference, and include them as follows:

II. Coal Mining Branch

A. B. Kiser
Chairman

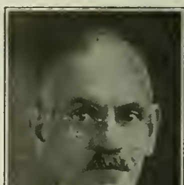
Underground Power Transmission

THE WORK of this section is closely related and coordinated with that of the section on power equipment. Several important meetings have been held, and the work is so well defined that the report which will be presented to the convention will be of the greatest interest. The following well-known gentlemen comprise the personnel of this section:

Harry M. Warren, electrical engineer, D. L. & W. R. R., Scranton, Pa.; W. A. Chandler, Hudson Coal Co., Scranton, Pa.; R. L. Kingsland, general superintendent, P. & M. Dept., Cons. Coal Co., Fairmont, W. Va.; Carl Lee, electrical engineer, Peabody Coal Co, Chicago; L. C. Ilsley, Pittsburgh (Bureau of Mines).

Power Equipment

The splendid work accomplished by the able chairman of this section during 1920 was more than duplicated during the past year. Various meetings of the committee have been held, and the work is being closely linked with the effort of Mr. Kiser's committee, on underground power transmission. There are sixteen members, all representative men of the mining industry. Those interested in the subject of power equipment should not fail to hear the report of this committee to the annual convention. Its personnel is as follows:



K. A. Pauly
Chairman

D C. McKeeham, Union Pacific Coal Co., Rock Springs, Wyo.; G. S. Thompson, Colorado Fuel & Iron Co., Pueblo, Colo.; H. F. Randolph, consulting engineer, Pittsburgh; M. D. Kirk, Pittsburgh Terminal R. R. Coal Co., Pittsburgh; R. W. E. Moore, Westinghouse Electric & Manufacturing Co., E. Pittsburgh; R. L. Kingsland, Consolidated Coal Co., Fairmont, W. Va.; W. C. Shunk, Stonega Coal & Coke Co., Big Stone Gap, Va.; J. T. Jennings, Philadelphia & Reading Coal & Iron Co., Pottsville, Pa.; W. C. Adams, Allen & Garcia, Chicago; O. P. Hood, chief mechanical engineer, Bureau of Mines, Washington; Graham Bright, Westinghouse Electric & Manufacturing Co., Pittsburgh; A. J. Nicht, Allis Chalmers Co., Milwaukee; Stephen H. Green, Pacific Coast Coal Co., Seattle; Charles Legrand, Phelps Dodge Corp., Douglas, Ariz.; Martin J. Lide, consulting engineer, Birmingham, Ala.; C. D. Woodward, chief electrical engineer Anaconda Copper Mining Co., Butte, Mont.

C. E. Watts
Chairman

Underground Transportation

The work of this section has grown in importance under the direction of Mr. Watts. Several meetings have been held during recent months, and the report which will be rendered to the annual convention indicates that very substantial progress has been made in reaching conclusions and in making recommendations for the standardization of underground transportation including mine track gauges, track clearances, track curvatures and other important subjects relative to underground work. Every effort has been made to secure the most able men upon this section, with the following result:

Charles M. Means, consulting engineering, Pittsburgh; Graham Bright, Westinghouse Electric & Manufacturing Co., E. Pittsburgh; Joseph Bryan, General Electric Co., Pittsburgh; F. C. Cosco, Jeffrey Manufacturing Co., Columbus, Ohio, D. F. Lepley, general manager, Connellsville Manufacturing & Supply Co., Connellsville, Pa.; C. W. Larson, engineer, mining dept., General Electric Co., Erie, Pa.; E. A. Watters, general superintendent, Hicks' Coal Companies, Leechburg, Pa.; J. Milliken, President, Industrial Car Mfgrs. Inst., Pittsburgh; A. H. Ehle, general sales manager, Baldwin Locomotive Works, Philadelphia; H. K. Porter, mine car department, Hyatt Roller Bearing Co., New York; Frank S. Barks, president, Lincoln Steel & Forge Co., St. Louis; Fred Norman, chief engineer, Allegheny River Mining Co., Kittanning, Pa.; T. A. Parker, Hannibal Car wheel & Foundry Co., St. Louis.

Mining and Loading Equipment

Early in the year C. A. Cabell, of the Carbon Fuel Company, Carbon, W. Va., accepted the chairmanship of this section. Previous to that time Carl Scholz, of Charleston, W. Va., had acted as chairman, and under his leadership a well organized committee was formed. An interesting report will be made to the convention, and extensive plans for future work will be discussed. The work of this important section is being carried on by such well informed men as:

D. J. Carroll, Chicago, Wilmington & Franklin Coal Co., Benton, Ill.; E. N. Zern, mining engineer and editor "*Mining Catalog*," Pittsburgh; Carl Scholz, general manager, Raleigh-Wyoming Coal Co., Charleston, W. Va.; N. D. Levin, Jeffrey Manufacturing Co., Columbus, Ohio; J. M. Clark, Clark & Krebs, Charleston, W. Va., M. Mitchell, Sullivan Machine Co., St. Louis; William Whaley; Myers-Whaley Co., Knoxville, Tenn.; Wm. O. Duntley, Duntley-Dayton Co., Chicago; E. S. McKinley, Denver; Wm. E. Hamilton, Columbus, Ohio, Walter Stevens, Valier Coal Co., Valier, Ill.; S. W. Farnham, mining engineer, Goodman Mfg. Co., Chicago; E. K. Bowers, Morgan-Gardner Electric Co., Chicago.

COL. WARREN R. ROBERTS
Chairman Coal Mining Branch

Outside Coal Handling Equipment

The work of this section has been carried on by the chairman of the General Coal Mining Branch, Col. Roberts, who found its duties too arduous in connection with the general work. Dr. Henry Mace Payne, of Andrade-Eyre, Inc., New York City, accepted the chairmanship and in the short period already passed since his acceptance has brought forward and co-ordinated the splendid effort made by Colonel Roberts. A meeting of this committee was held in Chicago recently and Dr. Payne is prepared to offer many valuable suggestions through his report for the standardizing of handling equipment. The personnel of this section follows:

Dr. H. M. Payne
Chairman

G. F. Osler, general superintendent, Carnegie Coal Co., Pittsburgh; W. A. Bishop, general superintendent, Pocahontas Cons. Collieries, Pocahontas, Va.; F. W. Whiteside, chief engineer, Victor American Fuel Co., Denver; Jas. Needham, general manager, St. Paul Coal Co., Chicago; F. G. Morris, general superintendent of coal mines, Republic Iron & Steel Co., Sayreton, Ala.; A. J. Sayres, C. E. Link Belt Co., Chicago; W. J. Patterson, president, Heyl & Patterson Co., Pittsburgh; M. A. Kendall, chief engineer, Stephens-Adamson Mfg. Co., Aurora, Illinois; Warren R. Roberts, Chicago; Rudolph H. Kudlich, assistant to chief mechanical engineer U. S. Bureau of Mines, Washington.

Mine Ventilation

This committee has made most substantial progress in spite of the general business depression and the necessity for its members to devote all of their attention to business conditions. Mr. Montgomery is to present to the convention a report that will be exceedingly valuable and which will serve as a basis for the work of the committee during the coming year. The work is being carried on by the following able gentlemen:

W. J. Montgomery
Chairman

J. M. Doughty, Lehigh & Wilkes-Barre Coal Co., Wilkes-Barre, Pa.; Howard N. Eavenson, mining engineer, Pittsburgh; Martin J. Lide, Birmingham; G. E. Lyman, general superintendent, Madison Coal Corporation, Glen Carbon, Ill.; E. N. Zern, mining engineer and editor "Mining Catalog," Pittsburgh.

C. D. Knight
Chairman

Drainage

A change was made in the chairmanship of this committee early in the year, on account of Mr. Wood's removal from the West Virginia field. Under the able leadership of Mr Knight the growth of this committee has been most gratifying. Its personnel has been enlarged and much constructive work has been done. Its report to the convention will be one of the most interesting to be presented, and will be the basis for very valuable discussion. The present personnel is as follows:

M. C. Benedict, consulting engineer, Johnstown, Pa.; Walter D. Stockley, Fairmont, W. Va.; E. F. Austin, manager mine pump department, Dravo-Doyle Co., Pittsburgh; Cecil W. Smith, mining engineer, Nokomis Coal Co., Chicago; F. W. Smith, mine drainage engineer, Weinman Pump & Supply Co., Pittsburgh; F. J. Emeny, chief engineer, the Deming Company, Salem, Ohio; Professor John W. Hallock, head of department of industrial engineering, University of Pittsburgh; R. Y. Wert, mine drainage superintendent, Durham Coal & Iron Co., Soddy, Tenn.; J. H. Edwards, electrical engineer, Eklhorn Piney Coal Mining Co., Huntington, W. Va.; L. D. Tracy, mining engineer U. S. Bureau of Mines, Pittsburgh.

III. Metal Mining Branch

Underground Transportation

The condition of the copper industry has delayed to a certain extent the development of this section. Mr. Daly has given much thought and effort to the work and his committee members have submitted many splendid recommendations for standardization, to be presented through the report which will be rendered to the convention. The personnel of this section is:

William B. Daly
Chairman

George H. Booth, mechanical engineer, Inspiration Cons. Copper Co., Inspiration, Ariz.; Andover Syverson, chief eginneer, United Verde Exten. Mining Co., Jerome, Ariz.; E. M. Morris, assistant superintendent of mines, Anaconda Copper Mining Co., Butte, Montana; R. R. Boyd, assistant superintendent mine department, Copper Queen Branch, Phelps Dodge Corp, Bisbee, Ariz.; T. K. Scott, chief engineer Miami Copper Co., Miami, Ariz.; H. T. Hamilton, manager Moctezuma Copper Co., Nacozari, Son., Mexico; R. E. Howe, assistant general manager, Cananea Cons. Copper Co., Cananea, Sonora, Mexico; D. S. Calland, managing director, Compania de Real del Monte de Pachuca, Pachuca, Hidalgo, Mexico.

Drilling Machines and Drill Steel

This section is the largest from the personnel standpoint of any of the sections. In addition to its regular personnel, it has an "inner committee," which acts upon the recommendations made by the general committee. The recommendations made by this section last year were exceedingly practical and received by the industry with enthusiasm. The report to the convention will be comprehensive and will serve as a basis for the further work of the section. The following very able representatives of the mining industry comprise its personnel:

Arthur B. Foote, North Star Mines, Grass Valley, Calif.; Arthur Notman, Copper Queen Br., Phelps Dodge Corp, Bisbee, Ariz.; O. J. Egleston, manager U. S. Smelting, Refining & Mining Co., Kennett, Calif.; Arthur Crane, Hercules Powder Co., San Francisco; C. S. Elayer, Arizona Commercial Mining Co., Globe, Ariz.; J. A. Fulton, Idaho-Maryland Mines Co., Grass Valley, Calif.; L. C. Bayles, Ingersoll-Rand Co., Phillipsburg, N. J.; H. Seamon, efficiency engineer, United Verde Copper Co., Jerome, Ariz.; Ocha Potter, superintendent, Superior Division, Calumet and Hecla Mining Co., Houghton, Mich.; R. T. Murrill, Inspiration Cons. Copper Co., Inspiration, Ariz.; George H. Gilman, East Boston, Mass.; Charles Lees, superintendent, Iron Cap Copper Co., Copper Hill, Ariz.; Charles A. Smith, mine superintendent, Ray Cons. Copper Co., Ray, Ariz.; Roy Marks, stope engineer, United Verde Exten. Mining Co., Jerome, Ariz.; Earl Hastings, foreman, Clay Mine, Arizona Copper Co., Ltd., Morenci, Ariz.; Frank Ayer, mine superintendent, Moctezuma Copper Co., Pilares De Nacozari, Sonora, Mexico; W. G. Scott, superintendent, Coronado Mines, Arizona Copper Co., Ltd., Metcalf, Ariz.; Thos C. Baker, assistant general manager, The Mexican Corporation, Edificio, La Mutua, Mexico City, Mexico; Charles Officer, Sullivan Machinery Co., Chicago; A. S. Uhler, Ingersoll-Rand Co., New York; George A. Shaw, efficiency engineer, Denver Rock Drill Manufacturing Co., Denver; H. T. Walsh, vice-president, Sullivan Machinery Co., Chicago; R. A. Scott, sales manager, Denver Rock Drill Mfg. Co., Denver; Bruce Yates, Homestake Mining Co., Lead, S. D.

Norman B. Braly
Chairman

Inner Committee, Drilling Machines and Drill Steel—Frank Ayer, superintendent, Moctezuma Copper Co., Nacozari, Sonora, Mexico; H. Seamon, drill efficiency engineer, United Verde Copper Co. Jerome, Ariz.; Charles A. Smith, superintendent, Ray Cons. Copper Co., Ray, Ariz.; Arthur Notman, superintendent, Copper Queen Br., Phelps Dodge Corp, Bisbee, Ariz.; George Gilman, E. Boston, Mass.; H. T. Walsh, vice-president, Sullivan Machinery Co., Chicago; George A. Shaw, efficiency engineer, Denver Rock Dril Manufacturing Co., Denver; L. C. Bayles, chief engineer, Ingersoll-Rand Co., Phillipsburg, N. J.

Mechanical Loading Underground

This section was originally called "Underground Shoveling Machines," but was changed later, under the direction of Mr. Eaton, who is superintendent of the Cleveland Cliff Iron Co. properties at Ishpeming, Mich. This section did not render a report last year because it was not yet fully organized. It plans to include in its work the standardizing of general capacity cars for hand transportation, together with gauge of track; all cars for motor haulage, gauge of track, grade of drift, etc. Its first report will be made to the Chicago meeting and will be of more than usual interest. The personnel of this section is:

H. E. Billington, manager of sales, Thew Shovel Co., Lorain, Ohio; J. H. Hensley, mine superintendent, Miami Copper Company, Miami, Ariz.; Albin F. Victor, manager of sales, Lake Superior Loader Co., Duluth, Minn.; H. DeWitt Smith, superintendent of mines, United Verde Copper Co., Jerome, Ariz.; William Whaley, general manager, Myers Whaley Co., Knosville, Tenn.; R. W. Macfarlane, mining department, Longfellow Div., Arizona Copper Co., Morenci, Ariz.

Gerald Sherman
Chairman

Mine Timbers

Mr. Carmichael, who has been acting as chairman of this section, found his duties too heavy to permit his proper attention to the work, and Gerald Sherman, Bisbee, Arizona, has accepted the chairmanship. A considerable amount of work has been done and the report which will be rendered at the Chicago meeting will outline a program for future work that will be very gratifying to the industry. The personnel of this section is:

W. G. McBride, general manager, Old Dominion Co., Globe, Ariz.; Ira B. Joralemon, assistant general manager, Calumet & Arizona Mining Co., Warren, Ariz.; Felix McDonald, mines superintendent, Inspiration Cons. Copper Co., Inspiration, Ariz.; John Kiddie, division superintendent, Arizona Copper Company, Morenci, Ariz.; W. S. Boy, manager Ray Cons. Copper Co., Ray, Ariz.; T. Evans, general superintendent, Cananea Cons. Copper Co., Cananea, Sonora, Mexico; G. W. Nicholson, general superintendent, United Verde Exten. Mining Co., Jerome, Ariz.

Steam Shovel Equipment

This section is composed of men especially familiar with the subject and while the same conditions surround its activities as surround those of Mr. Daly's committee, Mr. Goodrich has prepared, with the assistance of the members of the committee, a very comprehensive report which will make practical suggestion with reference to the standardizing of steam shovel equipment. The personnel is as follows:

H. C. Goodrich
Chairman

Robert E. Tally, general superintendent, United Verde Copper Company, Clarkdale, Ariz.; G. W. Barnhart, manager, San Francisco Branch, Marion Steam Shovel Co., San Francisco; C. B. Lakenan, general manager, Nevada Cons. Copper Co., McGill, Nev.; H. G. S. Anderson, mining and metallurgical engineer, Hurley, N. Mex.

Fire Fighting Equipment

The work of this section, which was originally defined as "standardizing the type and quantity of fire fighting equipment which should be on hand and available for immediate use at all metal mines," has been under the very capable management of Mr. Connibear, mine inspector of the Cleveland Cliffs Iron Company.

CHAS. A. MITKE
Chairman Metal Mining Branch

Conditions in the Michigan iron ranges have been similar to those in the copper districts, but in spite of business anxiety progress has been made in the work, and a very valuable report will be rendered to the convention. The personnel is:

J. T. Young, safety inspector, Arizona Copper Company, Morenci, Ariz.; Orr Woodburn, safety first director, Globe-Miami District, Globe, Ariz.; A. A. Krogdahl, safety engineer, Oliver Iron Mining Co., Virginia, Minn.; Guy J. Johnson, safety engineer, Homestake Mining Company, Lead, S. Dak.; H. J. Rahilly, superintendent, Mine Fire & Hydraulic Filling Dept., Anaconda Copper Mining Company, Butte, Mont.

William Connibear
Chairman

Mine Accounting

This is a new section, and its personnel is but just completed. However, in spite of the limited time for the preparation of a report, Mr. McGrath, one of the foremost authorities on metal mine accounting, will render an especially well prepared report and will outline practical plans for the future work. The personnel of the committee is one to inspire confidence, and is composed of the following well-known authorities:

L. S Cates, general manager, Utah Copper Company, Salt Lake City; J. C. Dick, Salt Lake City; H. H. Miller, general auditor, Hercules Mining Company, Wallace, Idaho; H. L. Norton, Phelps Corporation, Douglas, Arizona; Harry Vivian, chief engineer Calumet and Hecla Mining Company, Calumet, Michigan.

T. O. McGrath
Chairman

Mine Ventilation

Mr. Mitke has been conducting the work of this section. Considerable investigation has been made along the original lines outlined, of investigating various types of ventilating equipment, and standardizing of blowers and ventilating pipe, etc., and a comprehensive report is being prepared. This section includes among its members some of the best authorities on mine ventilating in the country and its recommendations are received with interest. The personnel is as follows:

A. C. Stoddard, chief engineer, Inspiration Cons. Copper Co., Inspiration, Ariz.; D. Harrington, Bureau of Mines, Golden, Colo.; Norman G. Hardy, chief mechanical engineer, Smelter Dept., Arizona Copper Co., Clifton, Ariz.; W. A. Rowe, chief engineer, American Blower Co., Detroit, Mich.; E. B. Williams, manager mine fan department, B. F. Sturtevant Company, Hyde Park, Boston; Robert N. Bell, state mine inspector, Boise, Idaho; F. L. Stone, General Electric Co., Schenectady, N. Y.; C. E. Legrand, consulting engineer, Phelps Dodge Corp., Douglas, Ariz.; O. K. Dyer, Buffalo, Forge Company, Buffalo; Don M. Rait, assistant superintendent of mines, Calumet and Arizona Mining Co., Warren, Ariz.; A. S. Richardson, chief of ventilating department, Anaconda Copper Mining Co., Butte, Mont.

IV. *Conference Program*

A JOINT SESSION of the two branches of the Standardization Division will be held in the forenoon of Monday, October 17. This will be an informal conference, intended largely for getting the members and guests of the Standardization Division acquainted. At this meeting there will be appointed a committee to receive and review all reports from both branches, with the object of correlating the work and getting reports in uniform style for presentation to the conference. Separate sessions of the coal and metal branches will be held in the afternoon. The chairmen of the two branches will present their reports, which will be followed by presentation of reports of the chairmen of the various sections. These reports will be discussed and, if necessary, referred to the Joint Special Committee for final consideration before being presented to the conference for adoption. Members of the conference are cordially invited to attend the formal opening of the National Exposition of Mines and Mining Equipment, at the Coliseum, on Monday evening.

Tuesday, October 18—A program of special interest to the Standardization Conference will be given by the convention management at the Coliseum in the morning, and delegates are urged to attend. In the afternoon separate sessions of the two branches will be held and the discussion of reports will be continued. A special program for all convention delegates will be given at the Coliseum Tuesday evening.

Wednesday, October 19—A Joint session of the metal and coal mining branches will be held in the forenoon and the program will consist of addressses on subjects of particular interest to this conference. Men of national importance will address this session. In the afternoon final separate sessions of the two branches will be held, and final discussion of reports will take place preparatory to their presentation to the joint session Wednesday evening.

Thursday, October 20—The Standardization conference will attend the general convention at the Coliseum in the forenoon, and in the afternoon a joint session of the two branches will be held, and the program will cover Standardization, both national and international. The convention management has arranged to give this evening entirely to the Standardization conference and an unusual program has been arranged, including addresses by Herbert Hoover and other speakers of national and international importance. Final reports and resolutions for adoption by the convention will be presented.

Friday, October 21—Members of the Standardization conference will attend the convention at the Coliseum in the morning and in the afternoon, as a body, they will inspect the demonstrations of mining machinery and equipment at the National Exposition to be held in conjunction with the convention. In the evening the annual banquet of the convention will be held.

Saturday, October 22—Members will attend the general sessions of the convention at the Coliseum in the morning. The convention management has arranged special entertainment for the delegates in the afternoon. A special feature entertainment will be given at the Coliseum for all delegates Saturday evening, and all members of the Standardization conference are urged to attend. All joint and separate sessions of the coal and metal branches will be held at the Congress Hotel, the convention headquarters.

STATE TAXATION OF MINES TO BE CONFERENCE TOPIC

IN ADDITION to bearing the annual bill of the federal government of approximately $4,000,000,000, the taxpayers of the nation are supporting state, county, city and town governments—a burden even greater than that imposed by federal requirements. The American Mining Congress has devoted much time and attention to federal taxation with results which, it is beliieved, have been highly beneficial to the mining industry. Problems of state taxation, however, while important, have not been the subject of serious general consideration until recent years.

The local systems of taxation of particular states have not commanded the attention of the mining industry as a whole, but it is now recognized by leading authorities on mine taxation that the lack of uniformity in state laws, unscientific and varying methods of valuation and assessment, and the adoption of new methods of obtaining revenues by state and local authorities without due consideration to the relation and effect of such methods upon the industries of the state as compared with similar and competing industries of other states, and without relative consideration of the tax burden as a whole, and also the imposition in many instances of a high rate of tax upon a particular industry because of prejudice or discrimination against or indifference toward non-resident owners and stockholders, have resulted in an enormous tax burden which does not spread equitably over every unit of the mining industry, and a situation where properties in different states can not be operated on equal terms.

Believing that a thorough discussion of "state taxation of mines," (1) existing laws in various mining states (2) principles and (3) uniformity, by representatives of state governments and representatives of the wasting industries will serve a useful purpose, this subject has been selected by the Committee on Taxation of which Paul Armitage, New York, is chairman, for consideration at the Mine Tax Conference to be held under the auspices of the American Mining Congress at its coming convention in Chicago. Invitations have been sent to the governors of all the states to appoint special delegates to attend this conference, and the conference is open to all others interested in mine taxation who desire to attend. Members of the American Mining Congress are urged to take up with the governors of the states in which they operate the matter of having delegates appointed for this conference which has for its primary aim the discussion and refinement of methods which will equalize, simplify, and lighten the growing tax burden, and thus stimulate industry.

SOME PROBLEMS FOR COPPER AND BRASS

By Walter Douglas
President, Phelps Dodge Corporation

WHEN A COUNTRY GOES TO WAR, the responsibilities of the moment fall as heavily on its industries as they do on its individuals. Just as a nation must rapidly mobilize its man power in such crises, so also it must, without delay, mobilize its industrial resources. In the battles that follow, the two forces fight side by side.

As millions of men scurry from all directions toward the training camps to take their places with the colors, the spirit of patriotism becomes rampant, and there is little time or thought for that even more important although silent gathering of the country's industrial resources, without which armies would be helpless.

As men come maimed and wrecked out of war, so not infrequently do industries emerge with their foundations shattered, their prestige gone, their places taken by others. As wounded and broken men must reconstruct, so must industries, laid prostrate by war, rehabilitate themselves when peace dawns and normal conditions return.

Neither individuals nor industries ever gain much for themselves by attempting to throw the burden of their reconstruction back onto their governments. In the first place government will not assume it; in the second place it has the savor of capitalizing war services. The job ahead of many American industries is not to look to Washington to cure the ills of the war years, but to get out on their own and hustle.

WALTER DOUGLAS

Naturally I have copper and its affiliated industries in mind in recording these few thoughts. I doubt if any of the country's industrial bulwarks got so complete a scorching out of the World War. When nations decide to annihilate each other copper assumes an even greater importance than gold. You might, probably could, kill a man with gold but it would not be easy; you simply cannot kill a man in a scientific, up-to-date manner without copper. As a facetious writer once said: "The nation that goes to war without a good stock of copper is worse off than it would be without a Board of Strategy."

When Germany embarked on the war which ultimately set the whole world ablaze, about the first thing she did after mobilizing her armies was to gather up every scrap of copper, brass and bronze in the empire. Not only were the treasures of museums seized and public statues torn from their pedestals to be thrown in the crucibles, locomotives stripped of their copper fire boxes and tubes but the kitchens of the humblest homes were raped, and the treasured pots and kettles of the housewives were seized in the national interest. Why did Germany do this? Because Germany is not what we would commonly call a copper producing country. The Germans knew that without copper they soon would be helpless. They knew too that blockade would shut off all outside supply, and so they lost no time in mobilizing every ounce of the red metal that they could lay their hands on.

When the United States entered the war its first demand, almost, was on the copper and brass industries. Overnight the great producing organizations of the American copper companies were enlisted in the national service. Under intensive pressure the mines of Michigan, Montana and Arizona began to pour forth their heavily weighted ore, the smelters and refineries established new records for output, the rolling mills went on a twenty-four hour a day working basis, and there started into the ammunition factories of the country a flow of copper, brass and bronze sheets, tubes and rods such as the country had never witnessed before, and in all likelihood never will see again.

In a few weeks, the great copper and brass industries of the United States enlisted themselves in war service, supplying not only this country, but the rest of the world with a large proportion of its supply of the precious red and yellow metals. This service copper and brass rendered to the very end, as they will again if the need ever arises.

Those who are perplexed over the present plight of copper and its alloys must remember that an industry fundamentally commercial in character, cannot run away from home and go to war without sustaining some hurts. Not that copper was without previous war experience, for it had plenty and it profited greatly by it. Copper did its bit in the Spanish-American war, in the Boer war, the Russo-Japanese war and in the Balkan wars, and it gained not only by the demand created by these wars, but by the apprehension which these wars caused in all countries, spurring them to abnormal measures of preparedness, in which copper and brass played a very large part.

But in all this American copper found no reason to abandon in the slightest degree its commercial position. It could take care of a dozen such wars and never relinquish its foothold as one of the chief metals of commerce. But when America went to war things were different. Ordinary considerations of business were thrust aside. Our country was menaced and its every resource instantly placed at the disposal of the federal government. Every ounce of copper that could be produced was needed for the war service of our country and its Allies. Every facility of the great brass and copper fabricating plants was put to its maximum speed. And overnight two of the country's greatest industries were metamorphosed from producers of essentials of peace into producers of essentials of war.

I sometimes wonder how many people understand the fields which copper and brass abandoned in a few hours in order to do its part in war service. In a score of industries representing an annual consumption of copper and copper alloys running into hundreds of millions of pounds, an almost disastrous condition was created. There was no copper for them. The government needed it all and none was disposed to question its right to all that could be produced.

Now a country may be in a war and yet physically untouched by that war. Where this is the case, as it was with the United States in the World War, ordinary industry goes on, the demand for the usual materials of commerce continues with only slight curtailment. Therefore, when copper, brass, bronze and other copper alloys joined the colors, industry demanded something to take their places. And here is where a flood of substitutes was turned loose to provide the building, roofing, plumbing, hardware and other industries with the means of continuing operations.

It is in no spirit of criticism that I mention the intensive campaigns of other metals and materials to seize and entrench themselves in the positions always held by copper and copper products. It was good business from their point of view and they took full advantage of the situation. But I say unreservedly that it is not good business to continue the use of substitutes for copper and copper products in the fields where they are pre-eminent, now that copper is plentiful.

It may be good business from the standpoint of a plumber to use a substitute for brass pipe for hot water supply, because he knows that in time he will have to replace that pipe. It may be good business for a hardware dealer to sell brass-coated steel screws, because there is more profit for him in them than in solid brass screws. It may even be good business for a roofer to lay a tin roof that requires constant upkeep expense, and replacement every few years, instead of a copper roof, the life of which when properly laid is everlasting. But none of these things is good business for the consumer. The slightly higher initial cost of copper, brass and copper products generally, would not deter their use where the ultimate saving accomplished by them was understood.

Of course there are many basic industries in which copper must be used. Electricity is one of these. But in the last twenty-five years the copper industry has made tremendous strides in many directions. Today it is one of the chief sources of the nation's wealth. Europe today is clamoring for American copper, but Europe hasn't the money to pay for all the copper it wants, and our industry, like many others, is suffering from a heavy curtailment of its export business, which will continue until Europe finds some way to finance itself.

Hundreds of millions of good American dollars are invested in the copper and brass industries. Great plants have been reared. It is of national importance that these huge investments be kept busy, and pending the adjustment of Europe's economic difficulties, they must depend in large measure on domestic consumption. Some idea of the enormous growth of the copper industry may be gathered from the fact that while in 1895 the smelter output from domestic ores was, roughly speaking, 380,000,000 pounds, by 1916 it had jumped to 1,928,000,000 pounds, and in 1918, under pressure of war needs, reached approximately 2,500,000,000 pounds. Also the importance of the United States as a copper producing country may be gauged from the fact that while in 1895 the mine output of copper represented 51.5 percent of the world's supply, between 1916 and 1918 it was 62 percent and in 1919 it ran between 55 and 60 percent.

Of course no such tremendous increase of production could have been brought about on the basis of demand alone. But demand, particularly that created by the growth of the electrical industry, stimulated advances in the metallurgical and mining arts, making it possible to work low grade ores, which twenty-five years ago could not have been taken from the ground with any prospect of profit.

A frequently voiced criticism of the copper producing industry is that it has not always followed its product through; that having mined, smelted, refined and sold copper, it has paid little or no further attention to it. However true this may have been, it no longer is the case. The copper producer today is vitally concerned in the destiny of the metal after it leaves his hands. It is just as important to him to check up the consumption of copper, brass and other copper alloys in the thousand and one forms that they reach the ultimate consumer, as it is to the fabricator, to the manufacturer or "cutter" of the metals, or to the jobbers and retailers.

If copper, brass and bronze articles either of utility or ornamentation are being held by retailers at prices that are prohibitive, compared to similar articles of other metals or materials, one outlet for the copper flow is clogged, and that surely is a matter of concern to the copper mining interests. The same argument applies to copper and copper products in other fields. It has been said that in small articles copper and brass pass through too many hands, resulting in an abnormal price to the consumer. If this is the case it must be corrected, will, I am sure, be corrected before the co-operative effort now under way to stimulate the use of copper products has progressed very far.

My reference to small articles of copper and brass may be considered by some as trivial, considering the vast quantities of the metals that are used in building, electricity, ships, etc. But when we list the hundreds of different articles into which copper finds its way, either as copper, brass or bronze, we find that each one accounts for a very large annual consumption of metal. Take pins for instance. As far back as 1914, the pin industry alone absorbed something like a million and a half pounds of copper a year. Today I believe it accounts for more than two million pounds. Add to the consumption in pins, the consumption in hinges, in door knobs, in key hole protectors, in drawer handles and in scores of other small articles both useful and ornamental, and you get a staggering total. In a period when American industries are forced to do all in their power to stimulate their home markets, it would be crass folly to ignore such things.

If the miner of copper and the fabricator of copper and brass are to "follow through," it must be by co-operative effort. There has unfortunately been too little of this in the past. Through the Copper and Brass Research Association, which recently was formed, there has been brought about a cohesion of the producing and fabricating interests, which we feel sure will in time include the manufacturers of articles of copper and its alloys, the jobbers in copper products and indirectly those retailers, large and small, who deal directly with the ultimate consumer.

We who know copper feel that it is the peer of all commercial metals, that it has qualities not possessed by other metals and that through sheer merit it will in time find its way back to the many fields it occupied before the war.

What other metal is so easily worked? What other metal has such resistance to corrosion? What other metal gives such service or has such long life? What other metal has such a salvage value? What other metal is comparable to it in beauty?

Architects know all these things about copper. So do builders, and plumbers, too, as a rule. Also they know that in building enterprises copper and brass, while perhaps slightly increasing a budget at the outset, work an ultimate saving to the investor. In a recent number of the *Mining and Scientific Press* I read an article, the writer of which somewhat cynically asserts that "what the copper industry needs is an alarm clock," in which this statement is made:

"No well informed person questions the superiority of copper and brass for a great many of the uses for which substitutes are now being employed; the manufacturers of automobiles know this and the architects and builders know it."

All of this being true, which it doubtless is, we of the copper and brass industries are forced to the conclusion that one of our neglects of the past has been public education; failure to enlighten the ultimate consumer. And so among other things we have embarked on a campaign of education, the details of which are being directed by the newly formed Association in connection with its work of technical research.

Briefly expressed the task before us is to protect copper and copper products in those industries like electricity, where they already are firmly entrenched, to rehabilitate them in industries where they have been partially supplanted by substitutes as a result of the war, and to be constantly on the alert for new uses for the metal and its alloys.

I have purposely refrained from burdening this article with statistics of copper production and copper prices, and I have avoided technical terms and references, believing that the problems of copper just now have to do with plain, every-day, common-sense methods of stimulating sales in the domestic market. We want to sell more copper and brass. We can only accomplish this by getting the people to buy more of our products. They will only increase their purchases if they are convinced that it is to their advantage and profit to do so, and our job is to show them that it is.

This we purpose doing in part by educational methods, and we feel that we are particularly fortunately placed in that in exploiting the merits of copper and brass we need never resort to exaggeration or misstatement. Copper and copper products will live up to everyting that can be claimed for them.

As the Copper and Brass Research Association only recently was formed, I should like to direct attention to one of its very important functions which should be of interest to your readers. That is its general information service. Whether a man buys but a package of screws a month from his hardware dealer, or puts up a forty story office building every year, the Association is prepared to show him why he should use copper and copper products. All information, technical or general, concerning the metals can be obtained at the offices of the Association, No. 25 Broadway, New York City, and persons with problems on their mind, who cannot get to New York, are welcome to write their inquiries.

SALT LAKE TO ADVERTISE UTAH'S MINING RESOURCES

Fifty thousand folders telling of Utah's mineral wealth and the development opportunities which they present will be prepared and distributed by the Salt Lake Commercial Club and Chamber of Commerce. The mines are the source of 65 percent of Utah's wealth. Material for the folder has been gathered by the mining committee of the club and statistics by Thomas Varley of the United States Bureau of Mines. Copies will be sent for distribution at the coming Mining Congress convention in Chicago. The folder will also be distributed at the Utah state fair.

As planned by members of the mining committee, the booklet will present a complete epitome of the development of the industry, both mining and smelting, from 1865 to the present time. The statistics will cover production and the booklet will also include maps and graphic representations of some of Utah's mines.

COLORADO MINE LEADER ELECTED TO RAILROAD DIRECTORATE

BULKELEY WELLS, former president of the American Mining Congress, has been elected a member of the board of directors of the Denver & Rio Grande Western Railroad. Mr. Wells is the first Colorado business man not connected with the railroad in any way who has been elected to its board for the last thirty years, and his election is taken as an augury that the railroad will work hand in hand with the mine operators for the development of Colorado.

Following the election of Mr. Wells, president J. H. Young of the railroad gave out an interview in which he said:

"Mining is the industry that inspired the building of the Denver & Rio Grande, but, unfortunately, that business has had a long period of depression. It must be revived as far as possible. General Wells, as former president of the American Mining Congress and in his public and private business activities, has acquired a knowledge of mining and its needs which will enable him to make valuable suggestions.

"Colorado and the Denver & Rio Grande Western are largely dependent upon agriculture and irrigation incident thereto. General Wells has large personal interests in irrigation, and is acquainted with the needs of the agricultural industry. The general business of Colorado is a reflection of the efficiency of its transportation facilities. No man in the state has broader views or is more progressive than General Wells. It is a matter of personal gratification to me that Colorado has representation on the board and that so able a man has been chosen."

COAL LEADS WATER AS PRODUCER OF ELECTRIC POWER

PRELIMINARY REPORTS issued by the Geological Survey on consumption of fuel and production of power by public utilities plants by states during February, March, April, May and June, 1921, show that the increase in power output during these months of 1921 as compared with the corresponding period of 1919 was furnished by fuel consumption, the amount of water power produced being nearly the same in both years. The number of tons of coal consumed in power creation during each of these five months was, in their order, as follows: 2,629,563; 2,641,588; 2,416,579; 2,415,263; and 2,437,457. Corresponding figures for fuel oil consumption, given in terms of barrels are: 781,436; 848,866; 843,193; 853,380; and 918,958. The monthly consumption of natural gas, given in terms of thousands of cubic feet, was: 1,464,682; 1,543,664; 1,853,783; 1,994,126; and 2,064,024. The total power produced by these fuels each month is reported as the following number of thousands of kilowatt hours: 3,166,041; 3,394,987; 3,239,471; 3,269,060; and 3,236,809.

NO CUT IN APPROPRIATIONS FOR MINING BUREAUS

NEITHER the Bureau of Mines nor the Geological Survey will be seriously affected, either this year or next, by the cutting of budgets which has become so prevalent in Washington, according to present expectations. Each bureau is being operated so efficiently that no diminution of expected expenditures could be made without injury to the service.

Judge E. C. Finney, Assistant Secretary of Interior, is understood to have recommended increased appropriations for both the Bureau of Mines and the Geological Survey, especially for topographical surveys, research work on non-metals and shale and for publication of mineral resource information.

IRON ORE

By Dwight E. Woodbridge, E. M.

THE IRON ORE INDUSTRY is just now in the depths of the most severe depression it has known since it became important in America. Never has there been a year since statistics were first gathered in this country when the decline of a season has approximated the percentage that 1921 bids fair to show. But these doleful periods come and go, and each returning tide sets a higher mark than those before it. So, while the high point made in 1916 was due to conditions unlikely to recur, iron miners are not downhearted for the long pull, and they look for a material improvement in the coming year.

Nineteen sixteen was the record making year in iron ore; in that year the country produced 77,870,000 tons (of 2240 lbs. each) of iron ore., valued by the U. S. Geological Survey at $182,000,000. In that year twenty-four states contributed to the total. To make that total Minnesota led, and following it were Michigan and Alabama, a ranking that has not changed for a long time and that probably will continue for many years.

DWIGHT E. WOODRIDGE, E. M.

The distribution of iron ores throughout the United States is very general; more so than that of any other metallic mineral. There are but four states in which these ores are not found in considerable quantity. But not all known deposits are available for use at present. Some contain too little iron for direct smelting and others carry deleterious elements such as sulphur, phosphorus, titanium, silex, etc., in prohibitive quantities. Some deposits that are suitable in other respects are so far from manufacturing centers that transportation costs are excessive. Some deposits lie in scattered beds or in narrow veins or lenses. Still others, though they may be near centers of manufacture and are perfectly adapted for use, contain elements that make them undesirable for the iron or steel requirements of the particular region in which they occur.

As the value of iron is small when compared with that of the other leading metals, transportation costs govern the value of its ore much more absolutely than they do that of many other minerals. Charges for transportation, cost of mining, and character and quality of ore determine the worth of an iron ore mine. In other words, value is based on three main factors, location with regard to markets, mode of occurrence, and chemical and physical composition. Subordinate to these factors are others that may be regarded as of local importance. An ore low in iron content may be available because of cheap transportation, easy mining, adaptability for beneficiation or worth in metallurgy, while a far richer ore may wait indefinitely for exploitation.

Evidence of the interdependence of these factors is easily had. For example, the ores of southwestern Utah remain untouched. They are of high grade and are in quantity, minable from surface openings and with no expensive equipment or preparation, but mountain ranges and great distances intervene between them and any present markets. The ores of the Sierras of California are somewhat similarly placed. On the other hand the fossil red ores of Alabama, though they are low grade, carrying from 35 to 37 percent in iron, form beds of great lateral extent and suitable thicknesses, contain enough lime to be self-fluxing and lie near beds of coking coal. So they are mined to the limit of the demand for the iron and steel to be made from them. Similar illustrations may be seen in many parts of the world and in almost every iron region of the United States. The supply of brown ores in the southern states undoubtedly is vast and their mining is not difficult, yet the consumption of these is but a fraction of what it was forty years ago, although the iron and steel requirements of the nation have increased ten fold. Billions of tons of rich ores exist in the interior of Brazil, but the cost of transportation, the lack of fuel, and the absence of markets restrains their development. Ores of 50 percent iron lie under the sea on the coast of Newfoundland, but as transportation is cheap they are mined many thousands of feet beyond shore line. Hydrated soft ores along the coast of Cuba are easily mined and are convenient to the sea, but their moisture content and the cost of drying and handling keep them from as wide use as might seem logical.

Another controlling factor, one of a group that may be classed as of secondary importance, is that of allied industries. A study of freight rates on iron and steel from the great centers of manufacture in Birmingham, Chicago, and Pittsburgh shows that the country divides itself, along lines of practically neutral freights, into three areas that contain somewhat similar proportions of the total population of the United States, but that of Birmingham includes the negro element and is chiefly agricultural and its buying power is far less than that of Chicago, which is in turn less than that of Pittsburgh, in which latter arena are grouped the great fabricating centers. The area tributary to Birmingham lacks that diversity of manufactures that has made Pittsburgh such a center for steel. So the ore reserves of Birmingham are drawn upon but slowly in comparison with those which feed Chicago and Pittsburgh.

The ores of the Lake Superior region, although more than a thousand miles from the furnaces in which most of them are reduced, are so cheaply transported, so easily mined, and are of such quality that they furnish about 85 percent of the total of the United States. This fact calls attention to the factor of transportation facilities. Were the mines separated from their furnaces by 1,000 miles of rail haul they could not have attained the leadership which they hold. Their rank attests the importance of the highway of the great lakes. That free and competitive right of way extending from Duluth to Lake Erie ports, improved at great expense by the government for the carriage of large cargoes, has counteracted the disadvantage of mere distance.

Some of the magnetic ores of northern New York state are of low grade and some contain elements more or less deleterious, but they are so near furnaces and so amenable to beneficiation, or treatment that frees the iron oxide from its worthless gangue, that they are produced in quantity.

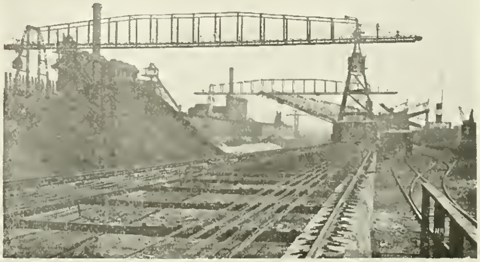
The iron industry of the United States is subject to certain permanent disadvantages as compared with that of leading producing countries of Europe. One of these is the fact that raw materials of production are, in general, so remote from each other that the cost of assemblage is much higher than in other iron making countries. In great Britain rail and water hauls are but short, and coal, ore and flux are easily brought together, and the manufactured article need be taken but a few miles to some convenient outport or consuming center. Somewhat similar conditions exist in France, Germany and Belgium. In the United States long distances may separate the ore and the fuel, whereas in England it is difficult to find an iron producing locality where ore and coal are more than a hundred miles apart. The average length of haul for all iron ore used in the United States is about 700 miles and for coke with which to smelt this, 300 miles. In Europe, when it is necessary to bring raw materials from one country to another, as in moving the ores of Spain or Sweden to England or Germany, the cost usually is low, both because of short distances and water haul.

In this country the cost of transport also tends to impede the ready distribution of products. These must often be carried long distances in their search for markets. The nation is of vast extent, and the industries that consume iron are in every part of it. Railroads are the principal means of communication between producers and consumers of steel in the United States. Heavy products can be carried from Liverpool to our Gulf ports more cheaply than from our own mills not situated on the sea or on the Mississippi river.

But the disadvantages have been largely overcome by the ingenuity of American engineers. Marvelous efficiency has been developed on the great lakes, and most powerful machines are used for handling the ore on land. Sometimes scarcely a human hand touches iron ore from the time it leaves the bed in which nature deposited it until it passes out of existence in the blast furnace, even though its journey may require not only mining but eight or ten transshipments. The nation owes more than is realized to those whose efforts have been bent to the improvement of the inland waters of the great lakes and their connecting channels.

300-TON SHOVEL MOVING ORE
Mesabi Range. Shovel is three times as powerful as those used in digging the Panama Canal

For many years there has been a gradual decrease in the amount of metallic iron included in the average hematite iron ores mined in the United States. This has given rise to fears for the comparatively early exhaustion of ores of that nature, or that their grade would be so reduced that the country could not maintain its place in the trade of the world. Such fears, while not without foundation, are yet a long ways from justification. The diminution in production of those ores suitable for the manufacture of bessemer steel, by the usual acid method, is a matter of more immediate importance, and the growing scarcity of bessemer hematite ores in districts where they are of use has led to a change in American steel making. Statistics of the Lake Superior ore trade for the past two decades show this gradual decrease in iron content of ores and the still more remarkable drop in percentage of bessemer ores in the district from which has been wont to come almost all the bessemer ores of the United States. These statistics show; first, that the proportion of bessemer in total shipments has dropped in twenty years from 64.9 percent to 32 percent, second, that the percentage of iron in this portion of the total has gone from 57.13 percent to 53.9 percent, and third, that the percentage of phosphorus has risen from .040 percent to .044 percent, or to the theoretical maximum for a bessemer ore; the significance of these facts lies not alone in the diminution of the proportion of bessemer to total ore, but also in the lowering of grade of the quantity shipped and in the rise of the percentage of phosphorus to the permissible limit for bessemer ores. It is well known that the so-called "bessemer' ore is one whose phosphorus content is so slight that the manufactured iron shall not contain more than 0.10 percent of it, and the ore must carry so little that the sum of phosphorus in all the ingredients of bessemer iron manufacture shall not exceed this percentage. Certain other minor elements are also limited by the bessemer maker, but these need not be enumerated here.



UNLOADING IRON ORE ON THE LAKES
Showing movable bridges for handling ore from stock, also cantilever extension from unloading machine dropping ore into stock. Ship on right, furnaces on left.

The most significant development that has taken place in iron ores during recent years is that which has brought into availability vast stores of the hard, lean, magnetic iron rock of northern Minnesota. For the reason that now some $4,000,000 are being put into a works for making high grade iron ore out of this material, it is attracting especial attention and causing much comment. There is nothing new in the idea of beneficiating lean magnetites; this work has been done for generations both in this country and abroad. Operations of the sort in the Adirondacks and in Sweden and Norway are well known. But there seems to be something almost revolutionary in applying to a very hard and lean magnetic rock, in which the crystals of magnetite are excessively minute, the principles of concentration that have been worked out in disseminated copper porphyries of the west: and applying these principles in such a way that the financial successes made in copper—which sells by the pound—are sure to be made in iron—which sells by the ton.

As the immediate of the experiments that justified this initial expenditure of $4,000,000 many hundred million tons of high grade, bessemer, ores are added to the reserves of Minnesota. As the indirect result it is hard to foresee to what far off horizon of the future may be relegated the exhaustion of Lake Superior iron ores.

The company that is making this investment has ambitious plans; it expects to continue and expand its construction until, when demand requires, it may be in position to supply 30,000 or 40,000 tons of concentrates per day, from mills two or three times as large as any now in existence. Even with such a draft upon them, its reserves are sufficient for generations.

There exist in the Lake Superior region assured and probable ores to a total of nearly three thousand million tons, of which nearly half come under the class of assured ores. These figures include commercial grades only, together with a conservative estimate of the concentrates to be derived from those ores owned by the company above referred to, and definitely known by it to be concentrable. The total does not take into consideration the vaster tonnages of iron bearing material, as estimated by the U. S. Geological Survey. Of this total more than half, or 1,635,000,000 tons, is on the Mesabi range in Minnesota, and more than two-thirds, or 2,139,000,000 tons, in Minnesota as a whole. The rest, with exception of some 77,000,000 tons in various Wisconsin areas, is in Michigan. In addition to the grand total as above, there are iron rocks on the Canadian side the lake, mostly low grade and requiring concentration, but probably in no such quantity as those south of the international boundary.

For the past few years the annual average consumption of Lake ores has been sixty or sixty five million tons, and during the seventy years in which the Lake Superior region has been a factor in the trade, shipments have doubled every seven years, on the average. Should they continue to double, even in four times seven years, that twenty-eight years would see almost their exhaustion. But in point of fact production cannot continue increasing decade after decade; long before the end there comes a time when it must decline. The mere physical difficulties inherent to the business of mining ore will attend to that. It is questionable how near the region has come, now, to its maximum. Many predict that the summit of the curve is almost at hand, and that there will begin soon a long and comparatively slow decline.

Where, when that time comes, will the ore be won for our industrial maintenance? There are the tremendous reserves of red ores in the Birmingham region; the probably great but uncertain quantites of brown ores in the states of Alabama, Georgia, Tennessee, Missouri and Texas; the magnetites of the Adirondacks and the red ores of other New York counties lying along Lake Ontario; the ores of New Jersey and the highlands of the Hudson river; the deposits of southwestern Utah and southern California, and the sporadic occurrences of the Pacific coast, and the intermountain states, the banks of Cornwall and the possibilities of the Blue Ridge.

As to any or all of these regions questions rise concerning transportation, tonnages available, and adaptability of the ore of a particular district to the requirements of manufacturing centers that it can reach.

The economic limitations of the Birmingham zone have been suggested above; they are emphasized by the fact that this area produces only about a tenth as much ore as does Lake Superior, although its reserves are nearly half as great and its furnaces and mills are at the very portals of its mines of both ore and coal. These red ores extend to a considerable distance both north and south from Birmingham and are mined in Georgia and Tennessee. While their iron content is not high they are comparatively dry and they carry some lime, so that the disadvantage of quality is more apparent than real.

Brown ores, or limonites, are widely distributed in several southern states. In Texas they appear repeatedly within an area of 20,000 square miles. Residual deposits occur in Missouri more or less frequently throughout an area of perhaps a quarter of the state; in Alabama they are to be found occasionally over 7,000 square miles. Sometimes they are very thin, and not always are they good enough to smelt until they have been washed free from clay and soil, in intimate admixture with which they often occur. On account of the difficulty of estimating tonnages no proper recognition has been given these ores. In my opinion their quantities may far exceed any official estimate ever made. But their use is now limited, to only 2.6 percent of the total of all ores. This is for two reasons; first furnacemen prefer others ores, and second they prevail in regions where demand for any ores is not great—as in Missouri or Texas—or where more satisfactory ores exist in quantities ample for all needs—as near Birmingham. Inconsiderable quantities exist in many Atlantic states. It is an interesting and suggestive fact that in Maryland, where there are six blast furnaces, seventy years ago there were 31, whose total iron making capacity was as great as the six can make in five weeks. And all those old stacks, whose ruins dot the state, used local brown ores; but all the iron now made there is from foreign ore, mined 1,000 miles away on the shores of the Caribbean sea.

In New York and New Jersey there may be a quantity of magnetic ore approximating the tonnages on Lake Superior, most of it lean and some of a character making it difficult to maintain grades. On account of the backwardness of the development of the steel business in that section these are mined to a very limited extent. Sometime the East will waken to its possibilities and then these reserves will be valuable. The same is true of the red ores of the Clinton region of New York, where five hundred million tons of available material lies buried. It is strange that the East should import from Spain and Sweden when a few miles from New York City and Philadelphia there are abundant stores of the same material. Utah and California, the north Pacific coast and the intermountain region are far from markets and will so remain until there are revolutionary changes in the steel industry. Their ores can never be available for the great iron making centers of today.

The future must depend on leaner ores and an extension of the science of beneficiation before smelting. It is in in this that lies the real significance of the present preparations for concentration on the Mesabi range. Of these leaner ores, rich enough to treat economically, there is an enormous but incalculable supply.

At our doors lie vast reserves which trifling economic or transportation changes will bring to us in increasing quantities—Newfoundland, Cuba, Chile and Brazil, and the possibilities in Hudson Bay and Ungava land. The nation must rely on its own leaner ores unless it is willing, in time to come, to forfeit its predominance in mining. Undoubtedly importation will grow, but they need not be a controlling factor now that the problem of concentration has been solved successfully at home.

MANGANESE

By Chas. W. Potts

TIME WAS, not long ago, when but few people had ever heard the word "manganese." It might have meant anything from an elusive germ to the trade name of lingerie. A few remembered it as a chemical element, and some associated it with antiseptics or blood tonics.

Immediately previous to our entrance into the world's war that word "manganese" was flashed across the wires of the country. It appeared in headlines over startling announcements in the daily papers. "Government geologists and metallurgists said that if America should become involved in the European struggle we could get along without, or supply all of our needs, so far as raw products were concerned, from our own resources with the exception of manganese." But of manganese we had no known reserves of importance, and manganese was of utmost importance in steel making.

As the name appeared more frequently in print its relation to iron and steel became fixed, but many people got the idea, as there are a few who still think, that it is the name of some special kind of iron ore.

Then the terrible thing happened. We did get into the war. The two most important things required to win that war were men and munitions. Munitions meant steel; steel required manganese. Nobody knew we had any deposits of manganese worth mentioning, but the steel industry said get it, and the patriotic War Boards got busy in the latter part of 1917 and as a result of their activities, manganese was unearthed from American deposits in such quantities that the market was overstocked with the ore and the alloys in the latter part of 1918. The public learned that manganese is not a form of iron ore, but that it is another metal. It is used in steel making but it is just as different from iron as lead is from zinc. There is still in the popular mind much confusion about its characteristics and its uses. This article will attempt to explain some of the technically interesting things about manganese in a way that will not be technical.

CHAS. W. POTTS

Manganese is a metal; it is about as heavy as iron; its specific gravity varies a little but averages 7.42. It has about the same melting point as pig iron. It looks, when new and unoxidized, like the freshly broken surface of cast iron, it is a greyish-white, but it has a slightly reddish luster that iron does not have. If you examine it before it is changed by exposure you will find it is about as hard as iron but is so brittle that it is easily crushed to small particles with a pair of forceps.

If you had some fragments of pure manganese metal and would leave them exposed to the air to examine later, you might think someone had played a practical joke on you when you should come look at them for they would be gone and in its place would be little piles of fine black powder. This powder would be manganese dioxide. The metal would have crumbled, taken on oxygen from the air, in other words, it would have oxidized, gone back into a chemical form quite similar to the form in which it existed as an ore. It is so unstable when pure that it will not long remain in a metallic state unless submerged under oil or kept confined in a receptacle where air will not reach it.

Manganese has so great an affinity for oxygen that it will decompose warm water with the evolution of hydrogen, in other words it will apparently dissolve in water leaving a black, inky sediment. Manganese also has a great affinity for sulphur; it has a greater affinity for both oxygen and sulphur than has iron and therein lies some of its chief advantages in steel making.

Versatility of Manganese in Steel Making

Now, everybody knows that steel is refined iron and to make steel the iron has to be melted. The manner in which the iron is melted has a great deal to do with refining it. Steel is ordinarily made in either a Bessemer converter or an open hearth furnace. In either of these processes certain elements that are deleterious to steel are burned out, but in the burning out of the deleterious elements there is also burned out too much carbon. A certain amount of carbon is needed to give steels certain desirable qualities. It is in this process of improving the quality of the common steel where manganese becomes so useful. It takes up the oxygen that has united with the iron of the steel and this chemical reaction is called deoxidizing the steel; it takes up the sulphur that got into the steel from the coke or from the original pig iron and this is called desulphurizing the steel. The adding of the manganese in the form of a crude manganese alloy replaces some of the carbon that has burned out; this is called recarburization. Besides the deoxidation and the desulphurization and the recarburization of the steel, manganese also greatly improves its quality by giving the steel ingots a more desirable texture, making possible the rolling and shaping without the formation of excessive fissures or surface defects. No other alloy can take the place of steel for improving its quality to the extent that manganese accomplishes this result. Manganese in increasing amounts raises the saturization point of iron for carbon. "Manganese is the best tonic for steel," is an old adage that still finds favor.

The use of manganese in steel manufacture started in 1839 for improving malleable iron and cast steel. No steel is made today without manganese; next to iron and carbon it is the most important constituent in steel making, yet in ordinary steel it exists in only from .30 percent to 1.00 percent. Contrary to the popular belief, its chief use in the steel industry is not as a hardener of special steel but as a reagent; for purging common steel of certain deleterious substances and carrying back into steel one necessary element, carbon.

While manganese in quantities less than 1 percent improves the rolling and forging qualities of steel, if the manganese is increased from 1½ percent up to about 6 or 7 percent the hardness and brittleness under shock increases so rapidly that the material is not of any commercial value.

Manganese Steel

In steel containing manganese from 7 percent and up to about 15 percent a curious change of quality takes place; the metal remains very hard but becomes tough upon suitable treatment. This is called manganese steel. Above 16 or 17 percent manganese the metal becomes again brittle and is of no commercial importance. Manganese steel has a high tensile strength and great wearing quality and finds considerable use in light armor plate, burglar proof safes, railroad car wheel tires, frogs and switches and dipper teeth for steam shovels and other heavy steel castings where excessive wearing qualities are needed. A comparatively small proportion of manganese is required each year for manganese steel. Less than 10 percent of the manganese that is used in the steel industry goes into manganese steel. While manganese is important as an alloy in making manganese steel as is chrome in making chrome steel, or nickel in making nickel steel, as tungsten or molybdenum in making steel alloys containing those minerals, yet the really important use of manganese is not in making special steels but in its use in making common steel and it is in this use that there is the greatest tonnage requirement.

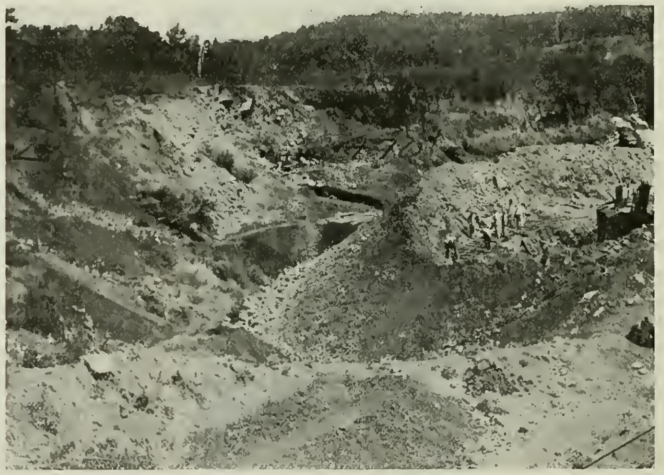
Spiegeleisen and ferromanganese are crude alloys of manganese and iron, containing some carbon and some silicon. Spiegeleisen includes all iron manganese alloys containing less than 20 percent manganese; ferromanganese contains 20 to 80 or even 90 percent manganese. Commercially iron-manganese alloys containing up to 35 percent manganese are frequently termed spiegeleisen, but texturally they are ferromanganese when they contain more than 20 per cent manganese. The alloys silico spiegel and silico-manganese have similar use to the foregoing alloys but contain from 4 percent to 25 percent silicon.

The alloys silico-manganese and silico-spiegel have up to the present time but limited uses in steel making and will not be further considered in this article. None of these alloys are ever used for mechanical purposes; they are not to be confused with manganese steel. They are kept on hand at the steel making furnaces like medicine at a hospital, to be administered as per directions.

How Manganese is Used in Making Common Steel

Manganese in the form of an alloy, under the common practice, is added to the molten steel at the time of pouring into the mould. About 15 pounds of metallic manganese is required to one long ton of steel. In the open hearth steel practice ferromanganese alloy is generally used, it requires about 18 pounds of ferromanganese to get 15 pounds of metallic manganese. If the steel is being made in a Bessemer converter about 75 pounds of spiegeleisen is used to obtain 15 pounds of metallic manganese.

A practice in steel making possessing very desirable results is obtained by the use of high manganese pig iron instead of using so much manganese in the form of ferromanganese or spiegeleisen. It has been the practice in European steel plants for a number of years. This practice was quite widely followed during the war period in many American steel plants and was considered an improvement in steel making as is evidenced by the statement of the superintenecent of one of the large steel plants of America in 1919, which paraphrased is substantially as follows: "The steel industry will be confronted year by year with the ever increasing need of meeting more difficult physical specifications. Can one logically assume that these demands are met by the almost archaic method of hurriedly adding ferromanganese and pouring the steel almost immediately? I am sure the answer is 'No.' The alternative lies in the use of manganiferous iron ores by the blast furnace and the production therefrom of irons carrying high percentage of manganese. There will be found not only material economy in manganese, but a reasonable recovery from the domestic ores and the certainty of a more perfect final product." It is of great importance at the present time on account of the large domestic deposits of manganiferous iron ore that could be utilized for their manganese content.



OPEN PIT MANGANESE MINING IN ARKANSAS

Both ferromanganese and spiegeleisen are commonly made in a blast furnace of the same type and in practically the same manner in which pig iron is made. The electric furnace has proved satisfactory in the manufacture of manganese alloys but is not generally used.

In the top of a blast furnace a mixture of manganese ore, iron ore, lime stone and coke is charged, the coke is ignited in the bottom of the stack and a blast of air is driven through tuyeres. As the ore is reduced to metal it is drawn off from time to time, run into moulds and when cooled is broken into small chunks to be used as required for its beneficial effects in making common steels or in making manganese steel.

The cost of producing manganese alloys is greater than

MANGANIFEROUS ORE MINING IN MINNESOTA
Operations were carried on upon a substantial scale in this state in 1918

the cost of producing pig iron on account of the higher cost of the manganese ore, the larger amount of coke that is required, larger percentages of losses in the manganese through volatilization and slag, and longer period of time required for smelting.

Other Uses Than in Steel Manufacture

The use of manganese in the arts is of great antiquity, having been known at least as long ago as the time of the ancient Egyptians. It was then used for coloring and decolorizing glass. It was not, however, until the latter part of the eighteenth century when a chemist by the name of Pott discovered that manganese formed a series of salts distinct from those of iron.

While 95 percent of the manganese used goes into the steel industry, it is also an important material in many other trades and professions, viz., as a chemical reagent in the manufacture of other chemicals; in the manufacture of certain dry cell batteries; in calico printing; as a dryer for paints and varnishes; as a coloring for brick, tile and pottery; as a disinfectant and antiseptic and as a constituent of certain proprietary remedies.

Occurrence of Manganese in Nature

Except in meteorites manganese is never found in a free or metallic state, but is always in chemical combination with some other element. It is a constituent of about 112 known and named minerals, most of which are complexly combined with other metals, are but little known, and as a source of supply are of no economic importance.

There are less than ten varieties of manganese ore regarded as a source of that metal for commercial purposes. These are, according to their geo-chemical composition, comprised in three groups, namely, oxides, carbonates and silicates. The most important manganese oxide ores are psilomelane, pyrolusite, manganite, braunite and wad. The first four of these ores vary from hard amorphous or crystalline minerals of greyish, bluish or brown colors, containing up to 69 percent manganese, to wad, an impure mixture of manganese oxide in a soft earthly mineral usually associated with iron ores and which contains from 25 to 40 percent metallic manganese.

Rhodochrosite ore, the only carbonate ore of importance, is a pink rock, quite heavy and contains when pure 47.56 percent manganese. Rhodonite, the only manganese silicate of present economic importance, is a hard pink rock which when pure contains 41.9 percent manganese.

No matter in what part of the world manganese ore is found its geologic occurence, its physical structure and its chemical contents are matched elsewhere. There is no appreciable difference between the psilomelane in the deposits of Arkansas and the psilomelane from Morro da Mina mine of Brazil, between the pyrolusite ore of Alabama and the pyrolusite ore from Russia. The manganese ores of the southern states are similar in their occurrence and are amenable to the same methods of beneficiation as are the brown iron ores of the southern states.

Sources of Manganese Previous to the War Period

Previous to 1914 the United States was largely dependent upon foreign countries for its manganese. About one-half of its requirements were met by the importation of the alloys of manganese; the balance was manufactured here from ores largely imported from Russia, India and Brazil. Less than 1 percent of the requirements came from domestic ores. America was the only steel producing nation that did not produce most of its own manganese alloys, but like its dye requirements depended upon foreign countries for its supply. Large deposits of iron-and-manganese ores were known to exist in Colorado, New Mexico and on the Cuyuna Range in Minnesota, but these ores did not find a ready market.

Remarkable Change in Source of Manganese Ore.

Through the closing of the Dardanelles in October 1914 the ores from Russia were cut off and due to the activity of the German submarines shipments of ore from India and Brazil were curtailed. European regulations and the shipping conditions cut off our importation of manganese alloys and America was called upon to supply her own needs. The following table shows the increase of domestic production:

Domestic Production of Maganese-Bearing Ore.

Year	35% manganese ore	10 to 35% ferruginous manganese ore	5 to 10% manganiferous iron ore
1910	2,258	41,260	19,841
1911	2,457	37,584	6,853
1912	1,664	40,863	10,654
1913	4,048	51,512	7,891
1914	2,635	91,666	6,599
1915	9,613	180,953	13,786
1916	31,474	453,853	89,447
1917	129,405	730,759	130,004
1918	305,869	916,163	252,615

The average domestic production of high grade manganese ore from 1910 to 1914, inclusive, had been 2616 tons annually. The production of 1918 is an increase of 11,700 percent over this average.

In 1910 manganese was known to exist in less than a hundred districts in the United States; in 1918 government publications reported it in 427 districts and in 1181 deposits, and many deposits are now known that were not then examined. Manganese is now known to exist in thirty states.

The number of shippers increased from about a dozen in 1910 to 41 in 1915 and to 408 in 1918.

D. F. Hewett, of the Geological Survey, said, "In April, 1917, few, even among the well informed, would have been willing to assume that the successive annual outputs in 1917 and 1918 would each be about three times that of the preceding year."

Still greater production would have followed had the market not been filled from foreign sources by the raising of the war time embargoes for there were about 500 mines either just being opened up or getting fully started. In some districts most of the activity was devoted to development, the sinking of shafts, stripping deposits with steam shovel, or the erection of washing plants. By another year the production would likely have been trebled again, and through the application of more approved mining methods and the beneficiation of ores the grades would have been highly desirable.

Domestic and Foreign Manganese Reserves

Russia, India and Brazil contain large reserves of manganese ores. Since the war period 80 to 90 percent of the foreign manganese ore has come from Brazil; 80 percent of the Brazilian exports to the United States are from the Morro da Mina mine, now owned by the U. S. Steel Corporation. Due to intensive mining, government reports tell us, the grade of ore from this mine has fallen down from its former averages of 48 to 50 percent until now anything over 40 percent is acceptable. There is, however, no question but that foreign ores of suitable grade can be obtained to meet America's requirements for many years if America again permits herself to become dependent on foreign countries for manganese as it was before the war.

No one is sufficiently informed as to our domestic reserves to place limitations upon them. The reports of the U. S. Geological Survey estimate that the domestic manganese ore reserves would last the country but two or three years under normal consumption. The only ore taken into account as a basis of this estimate is ore containing 35 percent or more manganese of which there is in existence, according to these reports, only 699,750 tons proved and additional ore in prospect 1,130,000 tons.

The estimates on reserve tonnages in the government reports have not been revised since 1918. The investigation on which those reports were based was made in 1917 and 1918 but did not take cognizance of the tremendous development that had taken place by the latter part of 1918, and the reports that are published this year do not take cognizance of the recent development in manganese mining. For instance, one district in which the government reports throughout these years estimated only 2800 tons of high grade ore, has shipped 166,650 tons, and the owners claim there are millions of tons still left in the ground. Other districts have produced more ore than was credited in government estimates and it is now felt by many who are familiar with the manganese or esituation that government estimates seriously belittle domestic manganese reserves. Much data have been collected within the last few months from various authentic sources as to domestic reserves and grades with the result that greatly increased tonnages and grades are disclosed.

Cumulative data indicate greater reserves than the old reports give credit, and adaptation of improved metallurgical practice increases the period of time our domestic manganese reserves will sustain the steel industry, as is shown by the following:

(1). That there is now a much larger tonnage of high grade manganese oxide ores known.

(2). That there is now a much larger tonnage of high grade manganese carbonate ores known.

(3). That there are greater tonnages of ferruginous manganese ores now known and that these ores are suitable for steel making and should be taken into account in estimates of reserves.

(4). That there are greater tonnages of manganiferous iron ores now known and that these ores are suitable for steel making and should be taken into account in estimates of reserves.

(5). That there are large quantities of manganese ores of good quality that are capable of beneficiation by washing processes similar to the method of preparing the brown iron ores, and that these ores constitute reserves of manganese that should be taken into account.

(6). That many of the ferruginous manganese ores and the manganiferous iron ores which have a combined metallic content less than generally accepted from smelting are capable of beneficiation and should be considered a part of the domestic manganese reserves.

Assuming that the estimates of the high grade reserves by the Geological Survey have been uniform, and assuming that the disparity in these estimates with the tonnages that have subsequently been proved to exist, are indices of the general disparity between the estimated and actual tonnages throughout the country, and taking into account the vast tonnages of metallic manganese available in lower grade ores and in ores that are mixed with iron, it is safe to assume that the manganese ore reserves of the United States will last the steel industry as long as the present known high grade deposits of domestic iron ore will last the steel industry. Ninety-five percent of the manganese consumed is used in the steel industry. An amount equal to about 2 percent of the annual steel production is a fairly close estimate of the manganese required in any year.

Manganese and the Tariff and Military Emergency

The Fordney Tariff Bill includes a schedule for the protection of the manganese industry in which a duty of one cent per pound on the metallic content of ore, and 2 1/5 cents per pound on the metallic content of ferromanganese, is provided.

There are two classes of people primarily interested in this schedule, (1). The producers of ore and the operators of merchant blast furnaces making alloys, who desire the tariff; (2) The steel manufacturers, the owners of foreign mines and the brokers of foreign ores and alloys, who are against it. The opponents of the schedule, relying upon the obsolete data regarding domestic manganese reserves, claim that those reserves should be retained for use in case of military emergency. The proponents of the manganese tariff schedule claim that this policy is fundamentally unsound and that it is based upon a false premise; that there are large reserves of manganese bearing material in the country, and that these should be developed to insure our commercial independence and protect our country in case of military emergency.

In case the United States should be so unfortunate that it would again be involved in war and an enemy nation should make a sudden attack by sea and should succeed in cutting off supplies of foreign manganese ore, our steel industry might be in a more serious plight than existed in 1918, for the condition that existed in that year had developed slowly.

Of what value would our vast resources be if locked in the inaccessible recesses of the earth? The manganese mines could not be quickly reopened and put on a producing bases. It takes time to develop mines.

Not only should a nation have for its protection armies and navies but those industries required to sustain them and sustain the existence of that nation in case it should be cut off from outside supplies. The manganese industry is one of those essential industries that should receive protection until it has reached a stage where it could be self-sustaining.

"An entirely undeveloped natural resource in the time of a national emergency is as useless to a nation as an entirely depleted one."

THE TUNGSTEN INDUSTRY

By Nelson Franklin

LITTLE is known generally of the element tungsten, as its use was limited until the war period, when it became general in speeding up the war program.

The principal use for tungsten is in an alloy of tungsten and steel in the manufacture of "high speed steel," which in the standard grade carries 18 percent tungsten. About 95 percent of the world's production of tungsten goes into high speed steel. A small percentage, probably not over one percent of the world's output goes into the manufacture of tungsten electric lamp filaments. Tungsten steel is also employed to some extent in valves for internal-combustion engines, it being harder than other kinds of steel and better able to withstand the heat from exhaust gasses.

Importance of the Industry

Machine cutting tools made of tungsten "high speed steel" have the property of maintaining their temper and cutting edges when traveling at a high rate of speed and under a red heat, when ordinary carbon steel tools would be rendered useless. Machine cutting tools made of tungsten "high speed steel" permit five times the output of work per man and machine possible with the old style carbon steel tools, hence the almost universal use of tungsten steel tools during the war period when labor was high and also the greatest possible speed was necessary in carrying on the war armaments and munitions program.

Tungsten Mining History

Tungsten was first discovered in the U. S. in 1900 in Boulder County, Colorado. There was a considerable quantity of float ore scattered over the surface of the ground, caused by the erosion through centuries of the outcrop of the various veins. This float material was in the form of nuggets, being high grade, having been freed of much waste material by the elements and required very little hand sorting or cobbing to make a shipping product of 60 percent tungstic trioxide which is the standard grade. Tungsten at that time was in little demand with the consequent very low price of from $2 to $6 per unit, a unit being 20 pounds of tungstic trioxide or one percent of a ton, which is the commercial basis on which tungsten is marketed.

The float ore however could be profitably gathered during the few years following and when the demand increased and with it an increase in price, the float soon became exhausted and mining was resorted to at shallow depths.

Mined tungsten ore which has not been exposed to the elements and as it comes from below the surface, is of low grade, carrying as low as one half of one percent to higher percentages in rich kidneys in the veins and requires concentration before it is of value commercially. Small makeshift plants of jigs and tables were at first employed and later as the demand increased and the price warranted it, large and expensive concentrating mills were erected and at the conclusion of the war there were over 25 large finely equipped tungsten concentrating mills in Colorado, Nevada, California and Arizona. Tungsten mining started in California in 1908 in the Atolia mine at Atolia, which property later became famous as a high grade mine of large resources.

Up to this period all the U. S. production of tungsten had come from Colorado. Later, and during the war period when prices for tungsten warranted investments, deep mining was started in Colorado, many new discoveries were made, large concentrating mills were erected and during 1915, 1916, 1917 and 1918 Colorado companies, notably the Tungsten Products Co., the Wolf-Tongue Co., the Primose Co., the Vasco Co., the Boulder Tungsten Production Co., the Rare Metals Ore Co., and the Mojave Boulder Tungsten Co., from their properties produced and furnished a large proportion of the tungsten consumed in this country for war purposes.

In 1916 there were discovered several very large low grade contact metamorphic deposits at Bishop, California, notably the Tungsten Mines, the Standard Mine, the Round Valley Mine, and the Pine Creek Mine. These properties were in time extensively developed and equiped with large concentrating mills and furnished a large amount of tungsten for war purposes during 1917 and 1918.

Late in 1917 several large contact metamorphic deposits of low grade ore were discovered in Nevada, notably the Pacific Tungsten Mine, and the Nevada Humboldt Mine, both of which have extensive development, are equipped with large plants of mining machinery and large concentrating mills but were only ready for production at the time of the signing of the armistice in 1918.

The accompanying table gives a complete history of the tungsten industry up to date, showing U. S. production, world production, U. S. imports, U. S. exports, U. S. low price and U. S. high price, from 1900 to 1920.

A study of the table will show that during the war period the world supply at one time did not equal the demand, consequently prices soared, which stimulated research resulting in the discoveries mentioned previously and the investment of vast sums of money in the tungsten mining industry. To economically handle the low grade ores it requires large plants of machinery and concentrating devices, as frequently it requires 200 tons of mined ore to produce one ton of concentrate carrying 60 percent tungstic trioxide, which is the standard commercial product.

Up to within a few months of the close of the war, our imports came principally from South America and very little came from China, but during 1918 the Chinese discovered a new field, vast in extent, covering several hundred miles in length and 2 to 8 miles in width, over which was scattered over the surface large quantities of float ore of high tungstic trioxide content, and which with very little hand sorting could be made ready for shipment. China promptly commenced to export to this country large quantities of this ore, produced at an abnormally low cost, and a large proportion of the imports showing in the table arrived after the armistice and a large quantity is still on hand in warehouses at seaboard owing to lack of demand, consequently the price has receded to the low figure of $3 per unit, which is below the production cost in China, plus the low transportation charges to the U. S.

NELSON FRANKLIN

Present Condition of U. S. Tungsten Industry In All Its Branches

Mining—It is conceded that the demand for tungsten ore at present is subnormal, as the alloy steel industry is in the same deplorable condition as the common steel industry with the demand at a very low ebb

The normal requirement has been variously est mated at between 5,000 and 7,500 tons of 60 percent tungstic trioxide concentrate. The demand at present is very small owing to the condition of the refining industry in the making of ferro tungsten and tungsten powder, which is later explained. The mining of tungsten in the U. S. entirely suspended at end of 1918 and not a pound of ore has since been produced.

Refining—The refiners of tungsten ore into ferro tungsten and tungsten powder, although they can purchase Chinese ore at as low a cost as can the English manufacturers, are unable to compete, and of those products at present consumed in this country, it is all imported from England at a price much below the cost of production in the U. S.

Over 35 large plants for the manufacture of these products were established at the beginning and during the war period and they are now all shut down.

Tungsten Steel Making—The many large crucible and electric furnace plants in the U. S., many of which were erected for the manufacture of "high speed steel" are entirely shut down on the making of that product, as they cannot compete with the British under present conditions, although being able to purchase ferro tungsten and tungsten powder imported from England at very low prices.

Legislation

Since the armistice, legislation has been asked of Congress for protection to this important industry, which cannot exist in any of its branches without it. The Timberlake Bill known as H. R. 4437 passed the House in August, 1919, was reported favorably with amendment to the Senate in March, 1920, but failed of consideration by the Senate. The present Fordney Tariff Bill, H. R. 7456, provides a duty on ore sufficient to permit the production of a limited amount of ore in this country, but the duty is not sufficient to allow the maximum production or sufficient to supply a normal demand, neither will it encourage the equipment of large known ore deposits of low grade ore.

Under adequate protection, the accumulated imported stocks in this country would gradually become absorbed and mining, refining and tungsten steel making would again be resumed and this country would be industrially independent for its supply of this very essential key mineral in which, owing to the exigency of war, there were invested in mining, refining and steel making, many millions of dollars, which can be employed, and would give employment to thousands of American workmen in the mines, refineries and steel plants.

Conclusion

Prior to the war our tungsten ore was shipped to Germany, was refined there and shipped back to us. The control of Germany on the refined product has now passed to England and along with it the British now absolutely control the markets of the world on the ultimate product "high speed steel."

It is to be hoped that Congress will allow the tungsten industry to continue in this country by protecting it to the extent of a duty on ore sufficient to equalize the cost of production between this country and China and a duty on all the finished products of tungsten sufficient to equalize the cost between this country and England.

TABLE SHOWING HISTORY OF TUNGSTEN PRODUCTION

YEAR	World Production Short tons of 2000 lbs.	U. S. Production Short tons of 2000 lbs.	U. S. Imports Short tons of 2000 lbs.	U. S. Exports Ferro Tungsten Equivalent to Short tons of 2000 lbs. Ore	U. S. Low Price Per Unit	U. S. High Price Per Unit	REMARKS
1900 to 1903		Discovery Period Production Small.			2.00	6.00	1900—First discovery of Tungsten in the U. S. in Boulder County, Colorado.
1904		500			6.00	7.00	
1905		750			5.00	6.00	High Speed Steel first manufactured in U. S.
1906	4,400	1,000			5.00	9.00	
1907	6,250	1,750			6.00	11.00	Price rose to $11.00 supply increased, price dropped to $6.00.
1908	4,250	700			5.00	8.00	Decrease in price, production dropped. Tungsten mining started in California.
1909	5,500	1,500			6.00	7.00	
1910	7,570	1,821			5.00	7.50	
1911	7,517	1,139			6.00	7.50	
1912	9,654	1,330	1,500		5.00	8.00	Marked increase in manufacture of High Speed Steel.
1913	8,476	1,500	2,100		6.00	8.00	Decrease in price and tonnage at end of year.
1914	7,879	990	800		5.00	9.00	U. S. decrease in tonnage caused by exhaustion of rich surface ores and low prices.
Prior to 1915 the price was maintained in close limits by the discovery of new foreign fields the moment price increased led to stimulation.							
1915	12,328	2,332	1,800		5.00	60.00	Stimulus of high prices at end of year caused activity and increased tonnage.
1916	25,670	5,900	4,000	600	18.00	92.50	The high price prevailed at beginning of year and a large number of new properties were exploited giving increased tonnage.
1917	27,060	6,144	5,000	2,500	17.00	25.00	Many new discoveries were made under the stimulus of these prices and output increased.
1918	36,500	5,029	11,600	1,250	12.00	28.00	The large contact metamorphic deposits of Nevada were ready to produce when they closed down owing to fall in prices.
1919	22,600	330	10,635	42	6.00	10.25	Mining entirely suspended in U. S. except to complete unfilled contracts to extent of 330 tons.
1920	Figures not complete. Estimated at 10,000.	None	4,320	None	3.50	6.00	No refining of Tungsten in U. S. The imports of 4320 tons were partly ore and partly ferro Tungsten and Tungsten Powder, equivalent to short tons of 2000 lbs. ore.

EFFICIENT OIL DRILLING MADE TOPIC OF TREATISE

THE BUREAU OF MINES has issued a report on the relation of oil drilling campaigns to income from oil property. It points out that in periods of low prices for oil, such as exist at the present, the margin of profit is at the best very small, and the correct determination of the drilling campaign may be the deciding factor between incurring financial loss or gain during the depressed period. The report covers matters relating to the general policy of the operator and the loss of recovery of oil from delay in drilling, including data showing effect of time of drilling on ultimate recovery. It discusses methods of determination of drilling campaigns and analyzes data obtained in investigations made in the Buena Vista Hills area, Kern County, California, and the Tract in Caddo field, Ferry Lake District, La.

The report enters into a detailed discussion of determination of proper spacing in order that the operator may produce and market all available oil at the earliest possible time, thus insuring the early return of expended capital for the re-investment. Tables are produced to show the difference in ultimate production per acre, in several pools, due to variation in spacing of wells, observations for which were made in various fields in Oklahoma, Pennsylvania and California. The conclusion is reached that the determination of the proper ultimate spacing for a large tract need not be undertaken until after the protecting offset line wells have been drilled, and for tracts where wells have been drilled, according to a scattered program until after the completion of isolated or scattered wells.

THE ZINC ROOFING SITUATION

By Edgar Z. Wallower

DURING RECENT YEARS when production and consumption of zinc have maintained a lively gait, the subject of wider uses of zinc did not arouse much organized enthusiasm among those most vitally interested.

Under present conditions when the rate of consumption is less than half of the 1920 average and still less than the actual production by at least 28,000 tons a year, the mine operator and smelter hold quiet communion of thought and speculate on how and when all this zinc is to be used. The announcement of some new process or industrial application that would forthwith consume a large tonnage of zinc would certainly bring prolonged applause from both.

As an industry we are fairly acquainted with the use of zinc in galvanized materials of all kinds and especially for building purposes. We are also quite sure that when Mr. Farmer gets busy in his long delayed program of fixing up the barn and the tractor shed, and repairing the galvanized barbed wire fencing, which is now falling to pieces through the ravages of rust, there will be a lively demand for zinc covered products, from the steel mills. But Mr. Farmer is not quite ready for this program, for he still has some notes to pay at the bank. Furthermore, he is still a little sore about the galvanized sheets he bought in 1913 and 1914, which have long since begun to peel and rust.

The zinc coated wire which he carefully put up before the boys went off to war is no longer zinc coated, and he wants to know what he is getting the next time he buys.

I talked with one of them at the county fair this year and asked him why he didn't put sheet zinc or at least galvanized siding or roofing on his barn instead of prepared roofing. He said he had inquired about the cost of sheet zinc but it was a little too expensive for him at this time. As for the galvanized material, he said, "If you fellows in the zinc industry are so sure about your zinc coated materials, why don't you establish standard specifications for galvanizing and advertise them all over Main Street? Then I will know as much about what I am going to get as when I buy a well known model of rough riding car. As it is now, I can only take the salesman's word that it was single dipped or double dipped and that doesn't mean much to me." There is something in what he says.

The galvanizers have been good friends and almost the largest customers of the zinc industry. And it is with only the friendliest feeling that we urge them to brand their goods, advertise the firm back of their brand, and adopt a standard set of specifications for galvanizing sheets and pipe and wire. It is the old story of putting the quality stamp and the backing of the firm on every piece of goods so that the customer may know what to expect, and whom to blame in case of trouble.

With the opening out of the Oklahoma-Kansas-Missouri field in the Joplin district, undoubtedly the richest zinc field in the United States and probably the most productive in the world, the capacity of our zinc mines expanded far beyond the bounds of demand of the galvanizers and brass makers combined. The result has been that the economic law in curbing production has brought zinc ore and metal prices to exceptionally low levels, and the natural result should be the opening up of new uses of metal made possible by lower prices.

We have been told many times by the manufacturers, of the multifarious uses of sheet zinc—the shoe lace tips, the pencil ferrules, wash boards and the much vaunted corset eyelet (which we must take on faith). They are all excellent applications, but they do not involve a great tonnage. In the Joplin district nowadays the producer sells in units of hundreds of tons of concentrates while formerly the large unit was a car load. Production from this district with zinc concentrates at $20.00 a ton is larger than the average output of the Missouri sheet zinc mines with prices ranging from $40.00 to $60.00 a ton.

EDGAR Z. WALLOWER,
Governor, Tri-State Chapter, American Mining Congress; President Golden Rod Mining and Smelting Corporation.

It is therefore logical to assume that if prices are to return to the former levels some new outlet for the metal must be found to absorb the resulting production. A movement in this direction has been gathering headway for nearly two years, which has great import for the future of the zinc people. The movement of which I speak, the real "white hope" of the zinc industry, is the practical application of sheet zinc for roofing purposes. In a way there is nothing new or startling about the use of zinc for roofing. It was rolled into sheets as early as 1807 and we have record of zinc roofs in Belgium in 1811, many of the roofs installed from 1820 to 1850 being still in service. Its permanence being capable of absolute proof, why is it that there are no more zinc roofs in the United States? Someone has certainly been asleep.

Realizing that the fortunes of the mine operator and the smelter were closely interlinked, the American Zinc Institute was organized several years ago, with the firm determination to use their combined energies for the betterment of the industry and the wider use of the metal.

A peculiar feature of the zinc industry from its early beginnings in this country has been the fact that the miners as a class have been independent of the smelters, with the result that instead of close co-operation for their mutual good there has nearly always been an economic warfare. The first thing the Zinc Institute had to do was to bring the opposing elements together on a basis of personal acquaintanceship and mutual confidence. This was necessary, on the face of it, before any co-operative work could be undertaken, and by earnest efforts on both sides was accomplished. Next they set about to make a scientific study of zinc roofing, sent an expert to Europe to secure the methods and applications in successful practical use over there, and made arrangements with one of the most prominent firms of architects in this country to have these methods applied to American practice. The Institute has prepared work sheets showing the application of zinc for practically all roofing purposes, in a manner that can be easily understood and applied by an ordinary sheet metal contractor.

This has been followed by the announcement of the manufacture of sheet zinc shingles by several zinc rolling mills and some small concerns devoted exclusively to this product. They have already made fair progress, the industry as a whole beginning to show its faith by using zinc shingles for roofing and at least setting an example.

For some reason the zinc roof about 40 years ago received a decisive set back, possibly as some suggest due to the fact that its everlasting qualities would give hope of few return jobs to the sheet metal worker. That can hardly be credited, as the metal crafts have used copper for cornice and roofing work without prejudice as to its indestructibility and in spite of its higher cost. The true reason probably is that the metal was used in the beginning for roofing purposes without full knowledge of all of its properties, on the general assumption that it could be treated in the same manner as copper or tin plate.

The fact that it could not be bent and worked as freely as copper led to the assumption that it could not be safely bent or worked at all. That may have been true some years ago, but I have bent sheet zinc of roofing gauge five or six times without sign of cracking, which would indicate that this argument hardly applies at the present time. The problem of expansion allowances was a serious one and the oversight of this factor caused leakages which were damaging to the use of zinc. Expansion of the metal requires very skilful attention, especially in a batten type of zinc roof. I was shown a roof of this type on a bank building not long ago. It was laid under the supervision of the manufacturer of the sheet zinc used and is as permanent as the foundations themselves.

Another difficulty was that rapid corrosion took place when zinc roofs were fitted with copper flashings and down spouts, electrolysis causing the rapid breakdown of the zinc. This matter was little understood and caused zinc to be generally condemned for roofing purposes.

It is hard to understand why the tin roof with its regular coat of red paint every few years gained any headway, but there was no generally acceptable substitute at the time it became established. Except for repainting it needed little repair and was thoroughly leak-proof.

The materials which came into general use up to the time of the war, briefly summed up as to their deficiencies were the following:—tin roofs, with high maintenance costs; slate roofs with high cost of installation, heavy weight and leakage due to easy fractures; wooden shingles subject to rapid deterioration and great fire hazard; tile roofs, high first cost, and excessive weight; prepared paper roofings, relatively short life.

Of recent years the asbestos shingle, the paper asphalt compound shingle, and especially during the war, the prepared paper roofing applied under standard specifications and careful inspection, received a tremendous impetus. The zinc industry was busy supplying war demands at prices that made zinc roofing well nigh impossible, and in the meantime the new winners of the field with great foresight were spending part of their profits in educational propaganda, preparing a stout defense against future competitive attacks.

The zinc industry now enters this field so strongly outnumbered by the forces of trade custom, prejudice and organized selling and distributing agencies of other roofing materials that it seems a very weak David in a veritable field of Goliaths. Further the industry itself is admittedly ill organized, due to the large number of small independent producers and the lack of team work among the larger ones. But the odds against success in this field are not as one sided as one might at first suppose. This David has just begun to fight.

It is common knowledge that the need for dwelling houses of all kinds will cause a wide spread building campaign just as soon as labor and building materials become adjusted, or to speak plainly, can be bought at lower and more stable prices. It is undoubtedly with the thorough understanding of this situation that the various manufacturers of prepared roofing materials have been conducting vigorous publicity campaigns for their products. As a matter of fact much more building of this type of construction has been going on during the year 1921 than generally appreciated.

The following figures of building construction in the United States are very significant:—

Valuation of Buildings Started
(Babsons)

	June, 1920	June, 1921
Residential Buildings	$ 44,339,400	$ 75,174,800
Total All Construction	$260,833,600	$227,710,900
	January 1 to July 1, 1920	January 1 to July 1, 1921
Residential Buildings	$ 348,580,000	$ 360,828,000
Total All Construction	$1,742,585,305	$1,066,256,100

Detailed analysis of the above summaries indicates that while business and industrial building construction is at a low ebb, there is a substantial gain in dwelling house building. In fact, relatively greater than the figures indicate, as prices are lower this year than last. There will be a strong demand for roofing material of one kind or another, and the decision as to which type will prevail will rest finally with the building contractor and the architect, especially the latter. Unless the prospective owner of a dwelling has some definitely preconceived ideas on the subject, he will defer to the opinion of the architect. The architect as a rule is a conservative person, not desiring to take any chances, and it is at this point that the convincing argument must finally be made.

The zinc industry as a whole should look this problem squarely in the face, and find out if possible why zinc for roofing has been so slow a development and what can be done to stimulate it.

In the first place the zinc shingle, with due allowance for its indefinite life, cannot now compete on a price basis with the ordinary asbestos or prepared paper shingle. When the builder gets as far along as the roof, and finds as is invariably the case, that costs are exceeding estimates he feels he cannot afford $20.00 a square for zinc shingle when he can secure a fire proof shingle at half the cost and probably good for 10 or 15 years.

The industry is in great need of a process for the manufacture of a sheet zinc shingle directly from Prime Western slab zinc. A brief outline of the present process is an explanation in itself of why the sheet zinc shingle is so expensive. In the case of one manufacturer, the raw product or zinc concentrate is purchased in the Joplin district, and shipped to a smelter nearly 200 miles south of the mines, where cheap gas for smelting is obtainable. The metal is then shipped to a point in Indiana where it is remelted and re-cast, after which it is held in a soaking pit for a period of time in order to establish uniform temperatures, after which it is run through a roughing mill and later rolled in bundles through a finishing mill. The large sheets are later cut up into small pieces and then stamped into the sheet zinc shingle. This schedule of production is not stated as a reflection upon the manufacturer, but as one reason why the costs are so high. It is not peculiar to his own case, but applies with more or less accuracy to all manufacturers of sheet zinc shingles. The reason of course is that the field has not yet broadened out to a point where there is a sufficient demand to warrant the production of zinc shingles in one continuous heat from the raw to the finished products. Henry Ford has begun to make this economy in the castings for his motors, only after many years of manufacturing during which other economies were made first.

The sheet zinc shingle must come within at least 50 percent of the cost of the prepared roofing materials in order to carry the day, and this can be accomplished in only two ways, one of which is to wait until the unstimulated demands will warrant a large and economical production, the other method being to take a speculative chance, build a plant where these economies can be made by processes which involve the least possible losses in fuel and skilled labor, and force production by the expenditure of an adequate appropriation for advertising and sales promotion. In this case such an appropriation would be just as much of a capital investment as the cost of the machinery. There is so much money apparently ready at all times for mining ventures of a highly speculative nature, that it seems unfortunate that no one is quite ready to step out into this field which when entered in the proper manner should yield such bright returns.

Secondly the manufacturers have been inclined, on account of their previous trade connections with sheet metal contractors, to place the zinc shingles through them exclusively. If the future of the sheet zinc shingle must depend upon its acceptance by the sheet metal contractor, who is forced to install it without violating any of the many and complicated rulings of the building trade unions, we are bound to admit that the proposition is crippled at the outset. The zinc shingle is so simple to lay, that a carpenter's helper or an ordinary laborer, trained to do this particular thing can place it neatly and without any difficulty. The lumber dealer sells roofings of all kinds, and has no antipathy to the sale of a zinc shingle if there is a fair profit in it for him.

Thirdly, the zinc roof has difficulty in meeting the competition of the brightly colored red or green prepared shingle, so much desired for decorative effects. This factor in a way eliminates it from the field of high priced residences where the cost is not so great a factor, and pushes it back to the lower priced house where every dollar in first cost is made to count. One manufacturer however, is oxidizing his shingle before shipment, removing that "tinny" appearance and giving the shingle its permanent cast, which is very pleasing in appearance.

These three obstacles, first cost, poor distribution and color, I believe, are at the bottom of the trouble. But they are not impossible of correction. Gradually processes will be developed that will cut the corners of costs and as volume of the output increases the zinc shingle can be placed on more nearly a competitively even price basis and its durability will act as its sales agent. In other words if we can come close to the other fellow's price the zinc shingle will practically sell itself.

Once it is demonstrated that they are salable, they should be put into the hands of every hardware merchant, lumber dealer, country cross roads general store and every roofing contractor. The high priced colored shingle may have its own field for a time if the zinc shingle can be sold over the counter anywhere the builder of an ordinary house turns to buy. It may involve placing the goods on consignment, but if it can be proven that the builder can buy and with ordinary carpenter labor place a zinc roof at near the cost of a prepared roof covering, the industry is strong enough to finance such a consignment plan, no matter how extensive. The value of 75,000 tons of zinc concentrates in the bins of the operators in the Joplin district, combined with the stocks of nearly 100,000 tons of metal in the hands of the smelters, would if properly combined in an aggressive co-operative plan form the basis for all the financing necessary.

In conclusion, the use of sheet zinc for roofing, like Banquo's ghost, will not down. In spite of handicaps and difficulties on all sides, the zinc industry as a whole is firmly confident that in the future, one of the chief outlets of productive capacity of zinc in this country will be in the various types of sheet zinc roofings.

HEAVY LEAD DEMAND DURING NEXT DECADE FORESEEN

By S. M. Evans
President, Eagle-Picher Lead Company

THE FUTURE GROWTH of the lead business is a most gratifying study. The demand for this metal is certain to be very much larger in the next decade than ever before, due in part to a continued acceleration of the requirements of the white lead industry and in part to the developments of that great industry which is responsible for the tremendous expansion in the copper business during the last twenty years, namely the electrical industry.

The evident disposition of Congress in relation to our chemical industries, in effect insuring their permanence and growth, will create large new demands for lead of a regular and permanent character. The constant expansion of the telephone business in the United States, the enormous building requirements of the country which must be taken care of during the next five years will further augment the demand for this metal. Indeed, the record of consumption of all these industries for the past five years projected into the future for five years indicates a requirement of metallic lead so large that it is a question among those interested in the lead business just where the supplies are going to come from. With the exception of the lead which occurs as an incidental to the great discoveries of zinc in the Oklahoma-Kansas field, no major deposits have been found in the United States in the last twenty-five years, while several large properties have been bottomed.

The relationship, therefore, of supply and demand will undoubtedly result in a strong stimulation in the way of high prices, the result of which no doubt will be the discovery and exploitation of new fields. As the United States doubled its zinc output in three years by reason of war necessity, it may easily be that we shall witness similar developments in the lead industry within the next decade.

COPPER EXPORT ASSOCIATION

By F. H. Brownell

THE Copper Export Association has been, and should be, of the greatest service to all miners of copper in the United States. It is not, in any sense, a money making concern, but is an association organized under the Webb Act for the purpose of enabling American producers of copper to unite in handling their foreign sales. It is highly desirable that every producer of copper should really understand this fact and should co-operate to the fullest with the Association in achieving its desired end.

Prior to the World War, nearly sixty percent of the copper produced in the United States was sold in Europe. Of this amount, Germany took a large proportion. The German buyers were permitted, and even encouraged, by their government to unite for purposes of buying and of dealing with foreign countries. As, at that time, under the Sherman Act, the American producers were not permitted to combine, either for domestic sales or for foreign sales, it is obvious that the foreign buyer had the American producer at a great disadvantage and everyone acquainted with the negotiations of that day knows that the American producer realized less for his copper sold abroad, and especially in Germany, than he would have been able to realize had an association like the Copper Export Assocaition been permissible.

In the early stages of the war, before the United States became involved, there soon developed a tendency on the part of the Allies to pool their buying, and this attitude again placed the producers of copper in the United States at a considerable disadvantage. The allies, acting as a unit, were able to make good bargains among the disorganized producers of the United States.

The situation in copper was not unlike the situation in many other lines of production. More and more, the business men of the United States began to realize that, in order to compete with the united action of European powers, it would be necessary for the American producers to be permitted likewise to unite. But any form of combination had long been forbidden by Congress. The enforcement of the Sherman law, with its prohibition of combinations, had been carried to extreme length, and further than was perhaps really intended by the framers of that act, and it was evident that some modification was necessary or the foreign trade of the United States would suffer seriously.

Accordingly, there was brought before Congress the so-called "Webb Act," which specifically permitted producers of a similar character in the United States to combine, so far as their foreign activities were concerned, provided that thereby prices were not enhanced or depressed or competition lessened in the United States itself.

Mr. John D. Ryan, then president and now chairman of the board of the Anaconda Copper Company, realized the importance of this act to the copper industry, and it was largely due to his able presentation of the facts to the committees of the House and of the Senate that the Webb Act was finally passed.

After the termination of the war, most of the main copper producers of the United States decided to organize an Association under this act, for handling sales of American copper in foreign countries.

F. H. BROWNELL
Chairman of the Board of Directors, Copper Export Association

Every producer of copper in the United States was, and is, not only invited, but earnestly requested, to join the Association.

The contract obligates the joining members to sell no copper for foreign use, directly or indirectly, except through the Association. For its services, the Association charges only actual costs to it.

The copper sold by the Association is divided among its members each month in the same proportion as the amount which each member has available for sale abroad, compared to the total so available. There is thus an exactly equitable and proportionate division of all foreign sales made among the members of the Export Association and all receive the average price for each month. No one member is permitted in any way to gain an advantage at the expense or detriment of any other member.

The intent is to give to the members of the Association every advantage realized, dividing the sales in exact, equal justice among them, both as to quantity and as to price.

Each member of the Association is entitled to a vote, based upon the tonnage of copper that he has contributed during a given period preceding the stockholders' meeting.

No dividends are declared upon the stock of the company, excepting seven percent upon $20,000 worth of preferred stock, which was issued and taken at par, in order to equip the offices of the company and to pay the expenses incident upon organization and establishment of agencies in foreign countries.

The Copper Export Association was organized in 1919. The following copper companies (enumerated in alphabetical order) now constitute its membership: American Smelting and Refining Company; Anaconda Copper Mining Company; Arizona Copper Company; Calumet & Arizona Mining Company; Calumet & Hecla Mining Company; Chino Copper Company; Consolidated Coppermines Company; Greene Cananea Copper Company; Inspiration Consolidated Copper Company; International Smelting Company; Kennecott Copper Corporation; Nevada Consolidated Copper Company; New Cornelia Copper Company; Nichols Copper Company; North Butte Mining Company; Phelps-Dodge Corporation; Ray Consolidated Copper Company; United Metals Selling Company; United Verde Copper Company; U. S. Smelting, Refining & Mining Company; Utah Consolidated Mining Company; Utah Copper Company.

Mr. John D. Ryan acted as president of the company for the first two years of its organization, devoting a large part of his valuable time to the service of the company without salary or other compensation. In fact, no officers of the Association receive any salary, excepting only the secretary and those engaged exclusively in handling the operating and clerical work of the company. Neither the president, vice-president, nor any director receives any compensation whatsoever. Their services are given gratis for the welfare of the copper industry as a whole.

After two years of devoted service, Mr. Ryan felt that the burden of the presidency should be passed to other hands and was succeeded by Mr. R. L. Agassiz, president of the Calumet & Hecla Mining Company, the present able and enthusiastic director of the Association's activities.

While the Association has existed only through the period of the most demoralized foreign trade the United States has ever known, it has demonstrated its value to the copper trade of the country and the wisdom of Congress in passing the Webb Act, which permits an association of this nature and kind to further the foreign trade of the United States. The price received by the Association in its foreign sales has been higher than has been realized during the same time from sales of copper made in the United States. (The Association itself, of course, does not sell any copper whatever, directly or indirectly, within the borders of the United States. Its activities are limited by law solely to the foreign trade.)

Prior to the organization of the Association, the reverse was generally true and buyers of copper in the United States usually paid more for their copper than the foreign buyers of copper. This placed United States manufacturers at a disadvantage. It was, however, the inevitable result of the old system, under which a united foreign buying could take advantage of a divided United States production.

The Copper Export Association has been of great value to the trade, in affording a convenient organization for the extension of credits to European customers, particularly in France, enabling these customers thus to manufacture and re-sell the copper before having to pay in full for the raw product. Continued credits extended over a long period of time will also give to the foreign buyer an opportunity to take advantage at a later date of a more favorable rate of exchange.

The Association has realized that it is necessary to extend every reasonable aid in the shape of a proper credit in order to enable European customers the more quickly to resume their normal activities and their consumption of our copper.

At the present time, the European consumption of copper is far below what it was prior to the war. This is due to the lack of money with which to pay for copper, rather than to a lack of demand. With the reconstruction of Europe, a tremendous need of copper is inevitable. The rehabilitation of telegraph and telephone lines, of street railways, of hydro-electric power lines and especially the construction of new hydro-electric power lines, made inevitable because of difficulties with coal experienced through the last few years, all point to a great demand for copper in the future, as soon as Europe has recovered somewhat from the first disastrous effects of the war and is again in a position to take up the activities of a period of peace.

More and more as the business condition of the world becomes normal will the Copper Export Association be found to be of advantage to the American copper producer.

In its limited field, it is comparable with the American Mining Congress itself, in that it is an institution organized and conducted to further and aid the business of selling copper abroad, just as the American Mining Congress is organized on a greater scale to further and aid the entire mining industry of the United States in all its branches.

The Copper Export Association realizes and deeply appreciates the benefits to the mining industry obtaining from the American Mining Congress, and hopes for its support and encouragement in meeting the difficulties of increasing and improving the sale of surplus American copper abroad.

FOREIGN AND DOMESTIC COMMERCE BUREAU TAKING SHAPE

HENRY C. MORRIS, of Washington, D. C., has been appointed head of the new Fuel Division of the Bureau of Foreign and Domestic Commerce. The selection was announced by Secretary Hoover early in September and Mr. Morris assumed office at once.

Mr. Morris is a graduate of the Massachusetts Institute of Technology and has had experience as a mining engineer in Colorado, Nevada and California and examining work in Mexico, Canada and Missouri. He entered the service of the Fuel Administration as a mining engineer in 1917 and in May of 1918 was transferred to the Bureau of Mines. His work there included membership on the Capital Issues Advisory Committee and related applications thereafter on the War Minerals investigation. He was nominated by Secretary Lane as a representative of the Bureau of Mines on the Economic Liaison Committee and served until June 1, 1920. Later he collaborated in the preparation of the Shipping Board report on the fuel oil supply. He was contact man on international petroleum matters with the State and Commerce Departments and made a study of the whole subject for the Bureau of Mines. He recently prepared a booklet on the raw material situation in the United States for the United States Chamber of Commerce.

Heads of other divisions of the Bureau of Foreign and Domestic Commerce, announced recently by Secretary Hoover, are as follows:

Leather division, Arthur Butman, of Boston; transportation, F. S. Gregg, Galveston; textiles, Edward T. Pickard, New York; industrial machinery, Walter H. Rastall, Dayton; agricultural implements, George B. Bell, Jamaica, N. Y.; foodstuffs, E. G. Montgomery, Ithaca, N. Y.; electrical machinery, R. A. Lundquist, Minneapolis; rubber, P. L. Parmerton, New York; iron and steel, W. S. Tower, New York; commercial law, Archibald Wolfe, New York; lumber, Axel Oxhoma, San Francisco, and automotive division, Gordon Lee, Rochester, N. Y. Other divisions are to be added, including chemicals and specialties.

The bureau's five geographical divisions will be conducted as follows: Eastern Europe, under E. Dana Durand, of Romeo, Mich.; Western Europe, Allan G. Goldsmith, Milwaukee; Latin America, Thomas R. Taylor, Hammonton, N. J.; Near East, James A. Robertson, New York, and Far East, Frank R. Eldridge, of Takoma Park, Md.

With the completion of the organization of the new divisions, all of the important industries of the country are now placed in direct touch, through the medium of the new industrial division heads, with the hundreds of foreign commercial agents of the United States who are busy digging up new trade opportunities and extending foreign commerce in every corner of the world.

BAD YEAR FOR PROPHETS AND PROFITS IN THE OIL BUSINESS

By Robert S. Ellison

Vice President, Midwest Refining Co

As FALL APPROACHES, it is only natural that those interested in the oil industry should endeavor to forecast its probable trend in 1922. However, being neither a prophet nor the son of one, the writer of this article makes no pretense of unveiling the future.

The writer recalls all too vividly the feeling and conviction one year ago of a great majority of oil men that more production—a great deal more production—was imperative to avoid an impending world shortage of both crude and refined oils. The rapid decline in the price of crude in 1921 is positive evidence that such shortage still impends, if such conviction is well founded, for we have had no shortage this year. Personally, I believe the industry generally faces such a shortage, but doubt if anyone can state with authority that one, two or three years will bring us face to face with it.

We do know that the winter of 1920–1921 saw an ever increasing development of both new oil fields and deeper producing sands in old fields; that apparently the world over the search for additional crude was pressed day and night, almost regardless of expense. We know that new refineries and additional facilities flourished and grew apace. Nature usually requires after strenuous efforts, however, that a rest or breathing spell follow. As a matter of fact, economic laws, such as supply and demand, are somewhat analogous, to say the least, to the laws of nature. What could be more natural, therefore, than that the year 1921 be a breathing spell after the orgy of 1920?

Whether the bringing in of new fields or deeper productive sands, the inability to pay for exports from this country by impoverished peoples abroad, coupled with unfavorable exchange rates, or whether the shut-down of factories and the severe readjustment of our great agricultural industry led to these conditions, is not of vital importance. Certainly, we are all aware that lack of orders for refined oils in the winter and spring of 1920–1921 resulted in the accumulation of such enormous quantities of refined oils at our refineries that we faced an over-production of crude.

It is obvious that any moving object or force when halted in haste occasions more or less strain and lost energy. Those not properly equipped or anticipating such sudden halting are bound to be wrecked, or at least be in need of repairs. In the oil industry, such repairs took the form of using both cash and credit to tide over the period of depression, or, where these were inadequate or lacking, by suspending operations in whole or in part. Refiners cut their capacity to the minimum; pipe lines stored crude and prorated runs; producers in many instances suspended further drilling as rapidly as possible and, finally, either in the exercise of good judgment or by force of market and financial conditions, left as much of their crude in nature's reservoirs as could safely be done.

ROBERT S. ELLISON

The most noteworthy fact in this connection, perhaps, is that the industry faced this situation almost without warning and unable or not wishing to believe it possible. No doubt the handwriting forecasting the coming of such a readjustment could and should have been read. It seems reasonable now that the oil industry should not be immune from depression when its principal customers are depressed. We realize now that with farmers and manufacturers forced to economize as seldom before, with unfavorable foreign markets for essential refined products, coupled with an ever increasing supply of crude, that the oil industry must inevitably be affected and its increasing momentum checked. That this condition should be deliberately brought about, however, by the large companies for selfish purposes, as is sometimes heard charged, is both incredible and monstrous. The fact that numerous refineries flourished with crude at \$3.50 or \$4.25 per barrel and suspended when the price in the Mid-Continent fell to \$1.00 and less is sufficient evidence to my mind to show our lack of orders during falling prices is due to business depression and curtailment of expense on the part of the buying public. The heavy note and bond issues at high interest rates show definitely how our largest companies have carried on and kept the industry in splendid shape for rapid recovery, provided the settlement of our principal internal and foreign questions is effected reasonably satisfactorily and fairly soon.

Under these conditions, the oil industry approaches what usually is and normally should be the dull season of the year. There is nothing to indicate that the winter of 1921–1922 will be an exception. In fact, many experienced producers, refiners and marketers anticipate an exceedingly dull winter. This may not be an accurate forecast but there are reasons to support it. In accordance with both sound judgment and force of necessity, practically every branch of the industry has been curtailing expenditures not absolutely essential to keep the industry from utter shut-down and chaos. It has taken time to get to such point, but September 1 finds drilling operations materially less than in January, 1921, and the practical, most far-sighted managements content to assist recovery by not burdening the industry with any expenditures not actually necessary during these times of financial stringency. No quarrel can be found with this policy. It is like the convalescent period of a patient who has been very ill—before restoration to active health, there must be a period of inaction to gather strength and regain steadiness of hand and of head. It may be we are close on to our convalescent period. Much can affect its duration and final outcome, however. Undoubtedly the speedy enactment by Congress of fair and acceptable revenue and tariff legislation and the successful outcome of the armament reduction meeting at Washington in November will be particularly helpful. The prompt readjustment downward of our railroad rates and other operation costs is equally vital. The realization by all employers that labor is not a commodity but a most important element of any organization and as such entitled to fair and just treatment, and by all employes that for them to prosper their employer must prosper and that his interests are theirs, is of vital importance. The political demagogue, the union organizer and the red agitator are now so closely allied that aimless discontent and industrial strife may cripple and delay business recovery. This is not the least, but is only one, of the problems our industries and the nation must handle and solve fairly but definitely. In short, with our own readjustment well under way, we become more and more vitally interested in removing other obstacles in the way of a general business revival. This can be had only, perhaps, when our post war changes are substantially effected and other industries have also been into the depths and again have begun the upward climb.

Personally, it is a source of pride that our industry not only served as a volunteer during the war without either the spur of the draft or the incentive of profiteering to urge it on, and that already it has reduced its costs in line with the requirements today of the public welfare. It is true there have been some outcries in this connection, but history records that in any retreat the camp followers invariably are the hardest hit, while the fighting men maintain their courage and patience until retreat once more becomes attack. The way in which the large companies have carried on the past eight months, so far as my experience goes, shows that they have, without exception, taken their enormous losses in inventories, borrowed funds at high rates, cut out deadwood wherever found and borne the smaller operators' burdens in many instances, as well as their own, without particular complaint.

Necessarily, there is more or less uncertainty, suspicion and distrust in some sections of the industry. The down-and-out operator, stock broker or promoter has to have some excuse other than inexorable economic laws for his present plight, and fear of loss or failure, coupled with natural envy, brings dissensions and differences in our own ranks when united efforts would be most helpful. No doubt this situation will continue until the rising sun of prosperity dissipates the fogs of suspicion and drives away the clouds of depression. Meanwhile, a thorough understanding is most important on the part of every one connected with the industry and, so far as possible, of the general public, that the oil business, like the agricultural, stock raising, gold and copper mining, automobile, textile manufacturing and scores of other industries, has been and is now undergoing a severe readjustment to lower cost levels during 1921, and that whether we like it or not it is necessary to a healthful business and a permanent future. It is important, in my judgment, that this fact be known by our citizenship generally and that the glamor of getting rich quickly be torn from the oil business. If not, the future promises a fruitful crop of adverse tax and other legislation which will aim at and penalize our industry and delay our return to normal prosperity. This is a duty we owe our business and country. The harder hit we are the more effective our evidence as to the real cause of our trouble. Would this not be fairer and better business than to direct our envy and malice at our stronger neighbor and thus counteract his efforts to uphold and stabilize the industry and also sow the seeds of unfair legislation which will restrict our future and affect each of us disastrously? This may be ill-sounded reasoning, but I believe in some respects at least the statement does not bring out with sufficient emphasis the dangers which actually threaten.

Of course, no one can be expected to aid or abet any concern which deliberately refuses to carry its full burden today but, on the contrary, is seeking to gain an unfair advantage at the expense of its neighbors. Just criticism of such methods should not be repressed, and no unfair action should be condoned. We should endeavor to act during these times of stress along the same lines of fair play and co-operation as in the sterner days of the war.

A possible danger may lie in permitting any present differences in our ranks to pass the bounds of healthy rivalry. For instance, those of us not directly interested in the levying of an import tax on crude oil can see more clearly than the producers interested in the Mid-continent or Mexican fields that there is a larger question at stake in the long run than the mere import tax on Mexican crude. We are convinced that foreign competitors, backed by government aid, may secure control of the potential oil production of the future unless the American producers with the active support of our government utilize our experience and prestige to maintain our present leadership.

It is true that many oil men are disposed to press their production without thought of the needs of tomorrow, but in dealing with a commodity as vital as is petroleum to all means of transportation and commerce those of us engaged in the industry owe some higher duty to the nation and to our successors than the mere accumulation of present wealth; or, at least, so it seems to me.

It is not wise to forget that petroleum is regarded as a natural resource, and with a government oil and gas leasing law already in force in the public land states that the tendency toward government control requires small impetus these days. The benefits of a government mandate over our railroads are not sufficiently obvious to welcome further supervision from that source, but unless the industry maintains a united front and solves its differences fairly in its own councils, the blighting hand of adverse legislation and governmental interference will ultimately deprive the business of both pleasure and profit.

The quality of our leadership and the character of our rank and file, however, argues well for the future of the petroleum industry, and having touched bottom in the first eight months of 1921 we can look forward with more assurance to rising prices in 1922.

OIL INDUSTRY CAN CONTINUE TO MEET ALL DEMANDS MADE UPON IT

By H. G. James

IT IS PROBABLY a true statement that never before in the sixty-two years of the oil industry in this country has there been witnessed such interest in petroleum for fuel purposes.

This is probably due to three things:

1. A realization, at least on the part of the public, that petroleum is not a fleeting commodity.
2. An unquestioned supply.
3. Its convenience and safety.

Until recently, all down the years alleged authorities have insisted that within a given period crude oil would become exhausted. During the war it seemed to be necessary, in order to spur the wild-catter to go forth and drill, to carry the impression that oil was likely to become exhausted and that every effort should be made to produce enough to win the war.

In the matter of domestic use, designing ones had educated the public to believe that oil was dangerous and that no successful means had been devised for burning oil in the home and public buildings.

All of these fallacies have melted away in the presence of uncontrovertible evidence to the contrary.

It must be taken into consideration that the oil industry, in spite of the fact petroleum had been known for generations, is only sixty-two years old. As an industry petroleum dated from August, 1859. It might be worth while to reflect that only within a comparatively short time has coal been a world-used fuel. It was necessary for coal to await the coming of cheap transportation to bring it into general use. Our fathers gathered driftwood and corded the felled tree for their fuel supply. Our grandparents gathered fagots. Today we are passing from coal to oil where we would have heat with ease and comfort. Oil, like coal, has had to wait the development of conditions favorable to its general use as a fuel.

H. G. JAMES
Secretary and General Manager, Western Petroleum Refiners' Association

Nothing more forcibly illustrates the adequate supply of oil as a fuel than the luminous story told by the record of stocks. In 1914, when the famous Cushing field was at its height, stocks of crude oil in the United States amounted to 141,500,000 barrels. Since then we have passed through the greatest war the world has ever known, with its attendant unparalleled demands upon the petroleum industry, and today we find in excess of 160,000,000 barrels of crude oil in storage, with more great fields in course of development and greater production in prospect, than ever before in the history of the industry. I would call attention to the fact that if petroleum stocks had been reduced during the war as publicly declared there would not have been a barrel in tank at the end of the conflict. The point is made to emphasize the fact that at no time has the ability of the industry to deliver been in danger, and the present predictions of some alleged experts of a shortage in one, two or three years are groundless. If necessity required, it is safe to say the yield of crude petroleum could be vastly increased in a comparatively short time. Oil men are coming to believe that oil can be found practically anywhere the formation is right. Only a small area is required for the development of a "big" petroleum oil field. Ever and anon, rich deposits of oil are being found by the restless prospector where least expected.

Only yesterday came news of a 25,000 barrel well in an entirely new district in Texas. No one can estimate today the potential possibilities of the new field in Arkansas. Wyoming and Colorado yet hold unlimited possibilities, and when necessity requires it will not be surprising if the Northwest is able to produce all the oil the world may need for years to come.

Only yesterday government officials and so-called experts were flooding the press of the country with statements to the effect that oil would soon be exhausted; that consumption was far in excess of demand; yet the fact remains the oil industry went through the extravagant period of the World's War, with demands undreamed of and yet concluded each succeeding year with a greater storage of refined products and greater potential crude output than ever before, and with production today so far exceeding consumption that practically one-fourth of all the refineries in the United States are shut down, others are running 30 to 50 percent of capacity; drilling has been largely curtailed, and the industry is suffering one of the greatest periods of over-production and depression in its history.

We would not leave the impression that the oil industry is irreparably hurt, for it is not. One of the remarkable characteristics of petroleum is that its periods of depression are invariably of short duration. It is a business that rapidly recovers from depression. The thing that I am attempting to emphasize is that there is and has been a sufficient quantity of petroleum to meet all demands, and that there will be indefinitely enough oil to supply the world. Indeed, I wish to show the public it can turn to oil for fuel purposes without fear of a supply.

May we not profitably glance at a few figures in support of this argument?

In 1914 stocks of crude oil amounted to 141,500,000 barrels; in 1921 they aggregated 160,000,000 barrels.

In 1917 stocks of fuel oil totaled 13,759,000 barrels; in April, 1921, 25,154,000 barrels.

In 1918 stocks of kerosene amounted to 380,117,000 gallons; in April, 1921, to 458,666,000 gallons.

In 1918 (at conclusion of war) stocks of gasoline amounted to 297,326,000 gallons; in May, 1921, to 808,551,000 gallons.

And during this period the internal combustion engine, the automobile, the flying machine and the oil burning battleship had their greatest development. The consumption of petroleum the past six or eight years has been little short of miraculous, and yet in spite of various statements and propaganda, production has increased more rapidly. Today it seems as if "they were finding oil everywhere."

Comparisons are said to be odious, yet we will probably admit they are usually interesting. For instance, the output of bituminous coal in the United States in 1917 was 551,790,563 tons; in 1920, 556,563,000 tons, a gain of 8 10 of one percent.

In 1917 the yield of fuel oil in the United States was 149,724,279 barrels; in 1920 the output was 210,986,903 barrels, a gain of 41 percent.

It should be borne in mind that during this same period the production of crude or raw petroleum increased from 325,315,601 barrels to 443,402,000 barrels.

Our excess supply or stocks of gasoline (motor fuel) in July 1918, aggregated 345,000,000 gallons, and on July 1, 1921, 752,668,000 gallons. And yet during that time autombiles increased in number with almost incredible rapidity.

We admit the petroleum industry has proved its ability to perform.

Indeed, the industry has grown so rapidly even those in it are unable to appreciate its wonderful progress.

Now the question arises "Can the oil industry continue to meet the demands upon it?" In my mind, unquestionably yes. It is true people by the thousands are turning to oil as fuel in the home, public buildings and in the shop and factory; the railroads are using oil more generally, more battleships are being built to use it. But I am afraid there is more likelihood of a limit to consumption than to the supply. Statisticians are already at work figuring on just how many additional automobiles the country is capable of buying. Remember we must have a normal increase of about 20,000,000 barrels of crude oil to keep pace with the normal and natural increase in output.

The thing the oil industry is worrying over is a market, not a supply. The oil fraternity is afraid of imports from countries where the potential supply of oil is almost unlimited. For a third of a century I have been "playing" with oil statistics and never have I been more convinced of the ability of the industry to meet every and all demands made upon it than now.

OIL SHALE—A POTENTIAL WORLD WIDE INDUSTRY

By Victor C. Alderson
President, Colorado School of Mines

OIL SHALE DEPOSITS are world wide in extent. Interest in them is almost universal. The deposits in Colorado, Utah, Wyoming, California, Nevada, Idaho, Montana, Kentucky, Indiana, Scotland, England, and France are now well known. Information of new deposits and fresh activities are constantly coming forth; e. g., new and extensive deposits are reported from Colfax County, New Mexico, from Terrell and Val Verde counties in Texas, and from the Upper Yukon valley in Alaska.

In Italy deposits are reported in the provinces of Como, Breacia, Udine, Vioenza, and Salermo. An Italian company has been formed to distill oil from the Sicilian bituminous shales. The process has been developed by Italian engineers. In 1920, 5,000 metric tons of shale were treated. An oil refinery, at Rome, is now planned.

The presence of oil shale deposits in Germany was well known before the war, but no serious attempts were made to develop them. The scarcity of oil during the war, however, called attention to them and effective exploration was begun, with the result that the deposits were found to be more extensive and richer than was supposed. The main deposits are in central and southern Germany, in Saxony, at Messel near Darnstady, but particularly at Rentlingen, in Wuerttenberg. Here tests gave 250 litres of oil to the cubic meter of shale. From the Jura mountains in Bavaria oil shale is also reported. A new German corporation "Bayrische Mineraleal Werke" has been formed, with state and national support, to develop the deposits and to erect retorting and refining plants. Before the war Germany depended upon importation for her supply of oil. The exigencies of the war taught her the importance of a domestic supply. Since the close of the war she has pursued a systematic development of her oil shale deposits in order to be free from the uncertainties of oil importation. The value of oil shale as a source of oil is clearly seen and intelligently acted upon.

In Spain oil shale deposits occur in the provinces of Castellon, Ternel, Burgos, Seville, and Soria. Tests thus far have not resulted in commercial operations.

In the Philippine Islands, oil shales are reported to occur in several districts, especially on the Boldoo peninsula, Tayabas Province, Luzon. The resulting oil has a paraffin base and is virtually free from sulphur.

Bulgaria has no oil wells but has extensive deposits of oil shale. For this reason the production of oil from shale has received special attention from the government and three concessions have been granted for developing the deposits. These deposits are five in number:

1. Breznik. The deposit is about 20 feet thick, yields 13 percent of oil, and is estimated to contain thirty million tons of shale. A test of this shale in Glasgow showed, in comparison with Scotch shale, a lower percentage of kerosene, gasoline, and ammonium sulphate, but a higher percentage of benzine, lubricating oil, and paraffin.

2. Hadomir. These deposits are even greater than at Breznik and are 12 miles in length. Samples have been studied in Berlin and found to yield 8 percent of crude oil.

3. Popovtzi. This deposit is only one mile from Papovtzi, and extends for five miles along the railway. Tests made by the government showed on the average from 7 to 13 percent of crude oil but the best results came from shale near the village of Sirbinovo which yielded 21 percent of oil.

4. Kazanlik. These deposits average 30 feet in thickness.

5. Sirbinovo. These deposits are about 80 feet thick. The quantity seems to be almost unlimited. Bulgaria

has great potential wealth in her oil shale deposits, which, when developed, will give her a domestic supply of oil sufficient to supply her industrial needs.

In Norway, oil shale deposits are found on the island of Auden, in the northern part, where they are closely associated with coal deposits; also at King's bay on the island of Spitzbergen. In Sweden, the chief deposits are at Kinnekulle, Nerike, and Ostergetland, which have been estimated by a Royal Commission to contain five billion tons of shale. The Sweden Shale Works Company reports that it is treating 100 tons of shale a day at its plant at Ilidings and is obtaining an excellent fuel oil which meets competition with other kinds of fuel.

The most varied economic use made of oil shale is, curiously enough, one of the direct results of the great European war. In 1916 the Russian Government needed fuel and turned to the oil shales of Esthonia—then a part of Russia, but now one of the new independent Baltic states —and made an exhaustive and systematic examination. It was found that these deposits formed the only great potential resource of Esthonia. After the organization of the new state, the government took active steps to develop the industry, till today, in Esthonia, the use of oil shale is more varied and more successful than anywhere else in the world, not excepting even, Scotland.

"Kukersit," the local name for oil shale from Kukers where it was first discovered, outcrops along the Gulf of Finland in steep cliffs. It dips slightly to the south, about one degree, so that it remains near the surface for long distances and can be mined cheaply by open cut work. The workable deposit extends from Jewe to Wesenberg, a length of 60 miles, and is six miles wide. The immediate available supply is known to be virtually a billion and a half tons. Analysis of good "kukersit" gives, on the average the following results:

Moisture	3.74 percent
Hydrocarbons	61.42 percent
Coke	7.68 percent
Ash (plus CO_2)	27.00 percent
	100.00 percent

From repeated tests sulphur, in the best grades, has been determined as follows:—

Total sulphur	3.48 percent
Volatile sulphur	0.43 percent
Constant sulphur (in ash)	2.05 percent

DR. VICTOR C. ALDERSON

The shale is subjected to low temperature distillation and yields the usual products which are really solid. Nowhere else is there so wide a use made of the shale itself and its products as in Esthonia. As fuel the shale is used in a variety of ways; viz., in firing locomotives, in the Reval gas factory for the production of gas where more than four million pounds have already been used: in Port-Kunda cement factory, where more than two million pounds have been used: under stationary boilers where the arrangement allows easy handling of the large amount of ash: cooking stoves, open grates, and similar domestic uses: on steamers, and in the burning of lime. All this use is made of the crude shale besides its use in the retort, from which are produced the oils, paraffin, and coke. The chief production of shale is at the Government mine at Kochtel, where the surface improvements consist of a central power station, ware houses, depot, offices, and houses for the officers and men. In 1920, 50,000 tons were produced and 500 men employed. Recently steam shovels were put into use so that the production could be largely increased. The government has opened a second mine at Port-Kunda, to still further increase production. Inasmuch as "Kukersit" comprises the greatest natural resource of Esthonia and the government is bending every energy to develop it, the progress made will be watched with more than usual interest.

South America

Brazil, one of the largest countries in the world, with a stable government and an enterprising people, with a great variety and wealth of natural resources, especially excellent iron ore, is dependent upon foreign sources for fuel—coal and oil. Fortunately the deposits of oil shale are found in abundance in several places, especially along the coast from the Amazon river on the north nearly to Rio Janeiro on the south. The deposit is exposed at intervals throughout the entire distance but is particularly well exposed for a distance of 400 miles in the state of Alagoas where it is known to extend for two miles back of the outcrop. Near Maceo, in Alagoas, experimental work on retorting is now being done. The late Sir Boverton Redwood reported this shale to yield 44.73 gallons of oil to the ton. With little or no coal or petroleum, Brazil naturally looks to oil shale as a valuable resource. The rapid development of the oil shale industry in Brazil, therefore, may be confidently expected.

Argentina contains numerous undeveloped oil shale deposits of which the Rio Grande, 240 miles from Alvear, on the Western Railway is the most important. The outcrop has been traced for twenty miles. The deposit is known to extend a mile and a half back of the outcrop, and has an average thickness of 100 feet. Like Brazil, Argentina has few deposits of fuel so that oil shale, when developed, is likely to be her main domestic source of fuel.

South Africa

The oil shale deposits of South Africa are recognized in four well defined areas: viz., the Ermelo district of the Transvaal; the Wakkerstroom district of the Transvaal; the Utrecht district of Natal; and Impendhle county of Natal. The oil shales of the Ermelo district occur in three veins; the lowest has a thickness of 20 to 24 feet; the middle one, 19 feet; and the top one from two to three feet, with some very thin streaks. Unfortunately, the lowest and middle veins produce little oil. The top vein yields 30 gallons of oil and 64 pounds of ammonium sulphate. Only a small amount of prospecting has been done so that the actual value of the field is not known. The thinness of the top vein should not alone bar the district from consideration because the district is crossed by the Broyton-Ermolo railway and therefore has better transportation facilities than any of the other oil shale districts.

The main bed of the Utrecht district has a maximum thickness of 22 feet, composed of a series of beds from two and a half to five feet in thickness. These beds are not uniform throughout the district, but, in places, thin out and enlarge. A test of the shale at the City Central Laboratory, London, gave 40.6 gallons, 57 pounds of ammonium sulphate to the ton; and 1.71 per cent sulphur. The distance of this deposit from a railroad is disadvantageous but other advantages would probably justify a branch railroad from Wakkerstroom.

The oil shale deposits in Impendhle county, Natal, occur in the Molteno beds and are best exposed on Crown lands in the Umkomas valley. E. H. Cunningham-Craig, of London, reports this shale to yield 27.10 gallons to the ton. Little development has been done but what has been done indicates a valuable deposit worthy of further consideration.

In the Wakkerstroom district, the oil shales are found chiefly on four farms: viz., Kromhoek, No. 76; Virginia No. 371; Goedgeronden No. 77; and IJzernoyu No. 280, thirteen miles from the city of Kromhoek. The deposit has been opened for a distance of three miles by open cuts 200 yards apart, sufficient to show the full section of the deposit with roof and floor. Until recently control has been held, and development made, by the African Oil Corporation, Ltd. A test of the shale at the Pumpheraton Works in Scotland gave 31.75 gallons of oil and 37.18 pounds of ammonium sulphate to the ton. The test also showed that the Scotch retort was suitable for treating the shale. Recently the Royal Dutch Shell interests, after a favorable report of their engineer, have taken a six month's option on the property of the African Oil Corporation. The advent of this company into the oil shale industry is an epoch making event as it assures development and financing on a worthy scale. Also it shows appreciation by those interested in oil production from wells, that, in the future, they must depend upon oil shale as the source of oil.

These interests are also examining the Sakalava oil shale deposits in Madagascar.

In other parts of South Africa oil shale deposits are reported; e. g. in the beds of Basutaland; in the so-called Black shale group in Southern Rhodesia; and in the Matatiele Division of Griqualand East, Cape Province. A test of this shale, made in the Government Laboratory at Cape Town, yielded 25 gallons of oil to the ton.

The absence of a domestic supply of well petroleum, the consequent importation of oil and oil products, and their high price, a large local demand the presence of substantial deposits of oil shale, all followed by the active interest of such a colossus of financial strength as the Royal Dutch group combine to indicate an early development of the oil shale industry into a successful commercial basis in South Africa.

Australia

Oil shales occur at various places in Queensland on Munduran creek near Gladstone, on Casuarnia island, Redbank Plains in the Ipsqich district, and on Murray's creek near Toowoomba. The deposit at Duaringa, on the Central Railway line, shows a thickness of six feet and yields 30 gallons of oil to the ton. At "the Narrows" the deposit extends for sixteen miles along the outcrop and inland for a distance from one to two miles. On Curtis island the deposit occurs between Badger and Monte Cristo creeks. Shale from the Munduran company holdings gave 28 gallons of oil and 47 pounds of ammonium sulphate. The most promising deposit in Queensland is in the Port Curtis district, reported by Lionel C. Bell, government geologist. Two beds, 10 and 9 feet thick, respectively, yielded 38 gallons of oil and 29.6 pounds of ammonium sulphate to the ton; sulphur one percent. A sample tested by Ronald Johnstone & Son, of London, gave 45 gallons of oil and 21.90 pounds of ammonium sulphate to the ton; sulphur 0.57 per cent. These deposits are well worth systematic development and exploitation.

The best known deposits in Australia are in New South Wales. The local name of "kerosene shales" is inaptly applied, as the deposit has the characteristics of the English "Torbanite" material, yields a very high percentage of volatile hydrocarbons (89 percent in pure samples) and does not split in parallel layers, but has a concheidal fracture. The discovery of oil shale in New South Wales was made as early as 1803 but was not formally noted till Count Strzelecki, in 1845, described it in his book, the "Physical Description of New South Wales." Commercial production began in 1865, with 570 tons. The total production from 1865 to 1919 was 1,840,876 tons of a value of 2,502,813 pounds sterling. At Joadja the earlier operations were conducted by the Australian Oil and Mineral Company, but a newly formed company—The Shale Petrol Oil Co., Ltd.—has taken the property. Recent developments consist of 200 feet of tunneling, two miles of new road, a retort, and a storage tank of 30,000 gallon capacity. The deposits at Newnes have been known and worked for many years, but the results of the Commonwealth Oil Corporation were disastrous and a receiver appointed. John Fell has revived the company, installed new retorts, and put the company on a commercial basis. The trouble seems to have been not a supply of shale nor a method of treatment, but inability to secure labor of the proper type. These troubles are now over and success seems assured. A new mine with eight working faces has recently been opened. The shale yields on an average 80 gallons to the ton. During the year ending June 30, 1920, the company received $81,460.00 as bounty on oil produced. A sample of oil shale from New South Wales tested at the Colorado School of Mines yielded 140 gallons of oil to the ton of 2,000 pounds.

In Tasmania oil shale, locally known as "Tasmanite," is found in the Mersey district. It occurs near the surface in beds up to 12 feet in thickness, yields 40 gallons of oil to the ton, and is estimated to contain twelve million tons of shale. A company of English and Australian capitalists has recently acquired interests near Latrobe and is planing to erect a plant of 100,000 tons annual capacity. A sample of Tasmanite, tested at the Colorado School of Mines, gave 68 gallons of oil to the ton. Besides the deposit of Tasmanite, there is a deposit of rich kerosene shale, similar to that of New South Wales, at Preolenna.

The oil shale deposits in New Zealand have been examined and favorably reported upon by the engineering firm of Ronald Johnstone & Son of London. These deposits are in the county of Wallace adjoining the township of Orepuki and are owned by the New Zealand Coal and Oil Company. Prospecting by diamond drilling showed four veins of shale, each between four and five feet thick, and an available tonnage of a million tons of shale. A test on 57 tons of shale, made in Scotland at the Pumpherston Works, gave 38.41 gallons of oil and 19.12 pounds of ammonium sulphate. The fractionation of this oil gave:

	Percent
Kerosene	25.92
Gas oil	3.07
Medium oil	4.05
Lubricating oil	17.55
Hard paraffin, four percent of oil (melting point 119.5)	19.03
Soft paraffin (melting point 86.5)	1.08
	70.70
Loss in refining	29.30
	100.00 percent

These deposits are, on the whole, of commercial importance, can be operated at a profit, and are deserving of exploitation and development.

Canada

In the province of Saskatchewan, Canada, two hundred leases on oil shale land covering an area of 130,944.81 acres have been issued. The oil shale deposits of the Pasquia hills are reported to be of commercial value both in oil and ammonium sulphate. Along the valleys of the Matagami, Moose, and Abbitibi rivers, in northern Canada, the discovery of oil shales in commercial quantities is announced by the Canadian Government. Shale from the Abbitibi river gave 87.36 gallons of oil to the ton. Other samples yielded as much as 123.2 gallons to the ton. Samples of shale from Newport Islands, County of Gaspe, Quebec, submitted by R. E. Lenthall were tested at the Colorado School of Mines and yielded 22.24 and 51½ gallons of oil to the ton. Oil shale deposits on Graham Island, Queen Charlotte Islands, are reported but only preliminary prospecting has been done.

The potential value of the oil shales of Newfoundland is very great. The deposits cover an area of 750 square miles, the largest of which lies between the head of White bay and Deer and Grand lakes. Here the thickness ranges from 50 to 100 feet. Average shale yields 50 gallons of crude oil and 80 pounds of ammonium sulphate.

The "Stellar" oil shale deposit at Pictou, Nova Scotia, covers an area of ten square miles and contains five hundred million tons of available shale. For economic working the deposit is ideally situated, in the center of a manufacturing region, with convenient rail and water transportation, ample water supply, and a good local market. The deposit has been examined by prominent engineers and scientists like Williams, Miller & Robertson, Edinburgh; Sir Boverton Redwood; Dr. A. E. Dunstan of London; and Dr. A. E. Hunter of Edinburgh. Their reports have been exceedingly optimistic. One third of the deposit, averaging 24 feet thick, that can be worked by open cut methods, is estimated to yield one hundred million tons of shale. One seam that averages 40 gallons of oil and 79 pounds of ammonium sulphate contains thirty million tons of shale. Beyond question this deposit is worthy of economic development.

The oil shale deposits of New Brunswick have been known since Dr. Albert Gesner, in 1851, distilled oil from the Albertite of the Albert mines at Baltimore, now Rosedale, but the discovery of flowing well petroleum in Pennsylvania snuffed out the life of the budding industry. Time and again attention has been called, officially and privately, to the importance of developing this oil shale deposit in New Brunswick till at last the British Government itself, through the Anglo-Persian Oil Company and the D'Arcy Exploration Company, has become practically and financially interested in developing the shale and experimenting upon the retorting and refining processes. An experimental retort of the Wallace type of eight tons daily capacity has been erected with satisfactory preliminary results. During the present year a drill hole has been put down for 1005 feet of which 940 feet was in oil shale and the bed had not been passed through. Other drillings amount to 17,000 feet. The most conservative estimate of the yield is that of Sir Boverton Redwood, 32.7 imperial gallons. With a virtually inexhaustible supply of oil shale, a promising process of retorting, with local interest like that of Lieut. Gov. Pugsley and Matthew Lodge behind the project, and the financial support of Great Britain, the outlook for a successful result could hardly be improved.

A comprehensive and world-wide view of the situation suggests a few striking facts.

1. The supply of well petroleum cannot be depended upon to supply indefinitely the needs of industry and advancing civilization for oil and its derivations.
2. The oil shale deposits throughout the world are virtually inexhaustible and supply a "second line of defense" as it were.
3. The main problems to be solved are:

   (a) The perfection of a retort of large capacity, foolproof in operation, and designed on correct scientific principles, that will produce the maximum amount of good oil.

   (b) The refining of the crude shale oil, not into a long list of chemical curiosities, but into a few standard products for which there is a steady market, and,

   (c) The co-ordination of the various elements so that as a business project the whole will be an economic success.

4. There is a world wide interest in oil shale—financial, economic, technical, chemical, and practical—that augurs well for its early development into an important factor in the economic advancement of the entire world.

MAKING THE BIGGEST AND COSTLIEST MAP IN THE WORLD

By Guy Elliott Mitchell,
Of the U. S. Geological Survey

THE GREAT TOPOGRAPHIC MAP of the United States which is nearly half completed will be the hughest and the most costly map in the world. It will also be the most refined and detailed. Millions of dollars have already been spent on this big project which ranks as an engineering job of first magnitude, and as the years go by will have much to do with fostering the full development of the United States. For the past forty years the United States Geological Survey has prosecuted this work of mapping the country from end to end, searching out every nook and corner of its wonderfully diverse physical surface and faithfully transmitting it to paper. When it is completed the map will be about 3,000 inches wide, but as it is considered that this would be somewhat inconvenient for pocket use, the map is being published piecemeal. As soon as a section or "quadrangle" is surveyed the corresponding sheet is published. Thus far some 3,000 quadrangles have been surveyed and the maps issued.

A topographic map is unique in that it is covered with contour lines, and contour lines are level lines of elevation. These contour or level lines are interesting and useful to the hiker, the camper, the prospector, the hunter and the fisherman, and the transcontinental railroad engineer, or to anybody who goes abroad through the country, for they not only portray the shapes of all the hills, mountains and slopes but they constitute a complete dictionary of altitudes for every named and unnamed point. Place your pencil on any point on the map and in ten seconds you can determine the altitude of that point, be it mountain peak, knob, gulch, or any place on or off the trail, wherever you may happen to be. The contour lines always follow levels, winding in and out of every inequality of the land surface and showing every detail of topography, every physical feature.

IN THE MISSISSIPPI LOWLANDS
Dense growth must be cleared away before mapping party can make use of their instruments

The cost of surveying and engraving a map of one of the standard quadrangles, comprising about 225 square miles, ranges from $3,000 to $8,000, according to the character of the country surveyed, but the individual map is sold by the Geological Survey at ten cents a copy, a price very little more than the cost of paper, printing and distributing. Of course only the government can do this. Were the map produced by a private firm it would be necessary to charge $5 a copy for it. Even so the map would be easily worth it and engineers at least would pay double that for it.

If you have ever had the pleasure of visiting any of the camps of the Geological Survey field parties where unmapped areas are being surveyed, you will appreciate the topographic map. The work is very interesting, even to a non-technical man, and it is characterized by its absolute thoroughness and exactness. The topographic maps made by the United States Geological Survey are, I think I can say without contradiction, the finest maps in the world. Most of them are made on the generous scale of one-mile to one inch, a scale that enables the topographer to put almost everything on the map which can be seen on the ground. The ordinary big wall map of the United States—a map about seven feet wide—is on the scale of forty miles of land surface to one inch of map paper. It is obvious, therefore, that one mile to one inch is a large scale.

A good engineer in the field will survey and put on his map one square mile in a hard day's work. That square mile will cover one square inch of the map; but in that small space will be shown by means of the finest hair lines and lettering every important physical, natural and artificial feature which that square mile contains.

Should you have any suspicion that these maps are not made carefully and with scrupulous accuracy, look into the matter yourself. The experience may be interesting, too. Take the trail for one of the topographic field parties in the mountains; drop in on any of them and go out with the topographer in the morning, just after daylight, and see how he does it. He will show you some instrumental surveying—the determination of distances and altitudes—that constitutes one of the most fascinating and entrancing jobs in the United States. And the result is the incomparable topographic map, which, later, after it has been inked, is engraved on copper and then printed from stone in three colors by the Geological Survey's lithographic plant.

Now you may also visit or imagine the engraver in the Washington office, carefully and painstakingly cutting each line of the engineer's original map, on a copper plate

THE TOP OF THE UNITED STATES
Mount Whitney, 14,501 feet above sea level. Surveyor has built a monument on the summit, thereby adding seven feet to the apex of the country

—representing miles and miles of contours and streams and roads and trails and bridges and houses and everything else you can see on the ground. He can of course cover more than a square mile, or rather a square inch a day, as the engineer does, but yet a difficult mountain sheet may take the engraver three months to complete.

The topographic map, as you will gather, is in no part a compiled map; it is made on the ground and everything that is on the map has been put there by the engineer with the original before his eyes. Now after the strenuous work in the mountains, during the open season, reducing the peaks and the valleys and the slopes to paper, the topographic engineer at the end of the field season when the land is wrapped in snow sits at his desk and inks in his sheet, so that it may be engraved and reproduced. This is a work of delight. As with India ink he traces over very hard penciled marks and lines he lives over every incident of the trying work of the past season, except that now only the pleasant phases are recalled, for nine-tenths of us are optimists and we forget the rough spots. Finally, he turns in what is nothing less than the original masterpiece, to be engraved and printed, which will prove a basic map, a "mother" map, for every class of engineering, from the simplest to the most complex, and for all time. There is just one other thing that should not be omitted. From the time the engineer has gotten half a dozen days' work on his precious sheet, he guards it as he would a pot of gold. He sleeps with it at hand; if he goes anywhere on Sunday he takes the map with him. He takes no chances of fire, or theft or somebody else's carelessness. In the Washington office, when inking it, and when he steps out to lunch, he thrusts it into the big fire-proof safe. As soon as it is completely inked, before engraving, it is carefully photographed, and copies are distributed and deposited in various places. Not till then does the engineer feel safe with his little five- or six-thousand dollar piece of paper.

HEADED FOR FARTHEST NORTH
Crossing Alaska with a pack-train. Mountains, swamps and icebergs are treated alike by the Topographical Engineers, who must know, literally, "every inch" of the country

So if any of you are contemplating going outside of the front yard, I urge you to get a topographic map of the region you intend to visit. It will prove a constant pleasure and a delight; and maybe it will keep you from getting lost.

THE NATIONAL RESEARCH COUNCIL

Its Services for Mining and Metallurgy

By Alfred D. Flinn

"Original research, however, is not a science; it is not a collection of laws. It is an art, because it is composed of rules which must be followed. It is the method of finding new truths of nature by study, observation, travel, or other means. The art of research is based upon the laws and principles of nature, and upon the relations of the human mind and senses to the external world. Nature on the one hand, and the human faculties on the other, are the only agents concerned in scientific research. Original discovery has its origin usually in the love of knowledge for its own sake, and in a desire to confer its benefits upon mankind."—G. Gore, LL.D., F. R. S., in "The Art of Scientific Discovery," London, 1878.*

ENGINEERS AND BUSINESS MEN connected with mining and metallurgy will please accept for the purposes of this article the dictum that research in the sciences is the continuingly prolific origin of progress in our modern industries. Many will grant that research for fundamental truth, regardless of its immediate application to industry, must be carried forward with increasing zeal, lest our progress be stalled. This effort must go forward in spite of the fact that many searches appear to produce no immediately utilizable results. In order that ineffective efforts and consequent losses may be minimized, it grows increasingly important that research should be done by thoroughly trained men. There should also be efficient means for co-operation and for exchange of information among men engaged in research, and between them and the men devoted to the numerous branches of technology. To aid in satisfying these needs, the National Research Council exists. The Council's functions are to stimulate, suggest and promote research in the sciences, to assist research men, to further the exchange of information, especially among groups working in various scientific fields, and to establish liaisons among scientists, technologists and managers of industry.

ALFRED D. FLINN
Vice-Chairman, Division of Engineering, National Research Council

Established in 1916 by the co-operation of scientific and engineering societies and the Engineering Foundation with the National Academy of Sciences, the National Research Council performed many special services during the World War, of great value to our country and its Allies. The Research Council was organized under the federal charter granted to the National Academy of Sciences in 1863. On May 11, 1918, the president issued an executive order which gave permanence to the Council and provided for the co-operation of the governmental departments. The National Research Council, however, receives no pecuniary support from the government, although during the war the government provided funds for some of the work which the Council did for the government.

Financial support for the National Research Council comes wholly from private funds provided by endowed foundations, scientific and technical societies, industrial organizations, and individuals. In December, 1919, the Carnegie Corporation of New York voted to the National Academy of Sciences for the National Research Council the sum of five million dollars to become available July 1, 1922. Of this gift not to exceed one-quarter may be used for a building, and the remainder is to be an endowment, the income from which is to be used for the current expenses of the Council. A condition precedent to this gift was the purchase of a suitable site for the proposed building by means of funds obtained from other sources. This condition was met by procuring a large plot of ground in Washington near the Lincoln Memorial, bounded on all sides by streets. From the land purchase fund, a balance remains on investment providing income for perpetual upkeep. Plans for the building have been drawn by Mr. Bertram G. Goodhue, architect, of New York, and preparations for construction are well advanced. This building will be a dignified, beautiful and practical structure, appropriate for the permanent home of the National Research Council and the National Academy of Sciences. Pending the construction of its new building, National Research Council occupies as its headquarters the building at 1701 Massachusetts Avenue.

The scope of activities of the National Research Council as now organized, is the "promotion of research in the physical and biological sciences and the encouragement of the application and dissemination of scientific knowledge for the benefit of the nation. The Council is neither a large operating scientific laboratory, nor a repository of large funds to be given away to scattered scientific workers or institutions. It is rather an organization, which while clearly recognizing the unique value of individual work, hopes especially to help bring together the scattered work and workers and to assist in co-ordinating scientific attack in America on large problems, especially those which depend for successful solution on the co-operation of several or many workers and laboratories, either within the realms of a single science, or different realms, in which various parts of a single problem may lie. It particularly intends not to duplicate nor to interfere with work already under way. It hopes to help maintain the morale of devoted isolated investigators and to stimulate

* A copy of this book was recently sent to Engineering Foundation and Engineering Societies Library by Sir Robert A. Hadfield, the recent recipient of the John Fritz Medal for the invention of manganese steel, with the following autographed note on the fly-leaf: "This book of Gore's has always possessed a fascination for me and I have been fortunate to obtain a copy, as it is now quite scarce. I send it with my best wishes.—June 29, 1921."

renewed effort among groups willing but halted by obstacles. It will try to encourage the interest of universities and colleges in research work, and the training of research workers, so that the inspiration and fitting of American youth for scientific work may never fall so low as to threaten to interrupt the constantly needed output of well trained and devoted scientific talent in the land." (Fifth Annual Report.)

For accomplishment of the purposes stated, the Council is now organized in six divisions of General Relations and seven divisions of Science and Technology, under the general direction of an executive board. The form of organization is so flexible that it may be and is being adapted, from time to time, to meet the varying requirements of the societies and industries which the Council seeks to serve.

Divisions of General Relations

		Chairman
I.	Division of Federal Relations	Charles D. Walcott
II.	Division of Foreign Relations	Robert A. Millikan
III.	Division of States Relations	John C. Merriam
IV.	Division of Educational Relations	Vernon Kellogg
V.	Division of Research Extension	Harrison E. Howe
VI.	Research Information Service	Robert M. Yerkes

Divisions of Science and Technology

		Chairman
VII.	Division of Physical Sciences	H. G. Gale
VIII.	Division of Engineering	Comfort A. Adams
IX.	Division of Chemistry and Chemical Technology	F. G. Cottrell
X.	Division of Geology and Geography	E. B. Mathews
XI.	Division of Medical Sciences	Victor C. Vaughan
XII.	Division of Biology and Agriculture	L. R. Jones
XIII.	Division of Anthropology and Psychology	C. E. Seashore

As now constituted, the chief purpose of the Council is to organize scientific effort, to survey and collate, and to initiate, promote and stimulate research in science and its useful applications. The membership of the Council in its divisions consists of representatives officially designated by leading scientific and technical societies of national scope, representatives of the govrenment, representatives of other particular research organizations, and members at large chosen by the divisions.

The chairman of the executive board is Dr. John C. Merriam, who is also President of the Carnegie Institution of Washington. The permanent secretary is Dr. Vernon Kellogg. Dr. George E. Hale, director of Mt. Wilson Observatory, was the first chairman of the Council and is now its honorary chairman. The vice-chairmen are Dr. Charles D. Walcott, secretary, Smithsonian Institution and president of the National Academy of Sciences; Mr. Gano Dunn, president of the J. G. White Engineering Corporation, and Dr. R. A. Millikan, professor of physics, California Institute of Technology. The treasurer is F. L. Ransome, geologist in charge, section of metalliferous deposits, U. S. Geological Survey, who is also treasurer, National Academy of Sciences. The executive board and the divisions work through committees, of which there is a large number. Membership in committees is not limited to the members of the Research Council.

National Research Council is in effect an "overhead" or advisory organization. The limited funds at its disposal are only sufficient for its expenses. Consequently funds for experimental research or for the support of other projects organized or promoted by the Council must be provided by the interested societies, industrial organizations or individuals, or be secured by special solicitation. The Council can assist in soliciting financial support, but ordinarily it cannot contribute from its own resources.

Among the noteworthy projects which have been financed, or for which funds are being sought by the National Research Council, there may be mentioned, research fellowships in physics and chemistry, research in the fatigue phenomena of metals, tables of physical and chemical constants, highway research, heat treatment of steel, Alloys Research Association, Personnel Research Federation. For the research fellowships, the Rockefeller Foundation contributed five hundred thousand dollars, to become available in equal annual installments during a period of five years. The Engineering Foundation and the General Electric Company each contributed thirty thousand dollars for the support of the Fatigue of Metals research, and other large gifts have been made by the General Education Board, the Commonwealth Fund, the American Telephone and Telegraph Company, the Southern Pine Association, and a number of industrial corporations, for sundry projects.

Records of the actions of the National Research Council are printed in the "Proceedings" of the National Academy of Sciences. Reports on researches and other investigations are published in the journals of the interested societies or in the bulletins of the universities or laboratories conducting the work. The Council publishes bulletins at irregular intervals, which are assembled in volumes of approximately five hundred pages, and a "Reprint and Circular Series" of pamphlets, any of which may be purchased at moderate prices. Many copies of these publications are distributed gratuitously for publicity and educational purposes. A list may be obtained, by request, from the publication office of the National Research Council, 1701 Massachusetts Avenue, Washington, D. C.

Supplementing its publications, National Research Council has made use of special exhibits and lectures for extending interest in research. Exhibits relating to wireless telephony and to gas warfare, besides being shown for protracted periods at headquarters in Washington, were each sent to other cities. Carefully planned publicity through technical and popular journals is also employed in the process of "educating the public." A department has been maintained in the *Scientific American Monthly*, in which accounts of some of the scientific activities of the Council, together with other articles on special phases of science, have been published.

With the financial support of Mr. E. A. Scripps, of California, a Science Service for dissemination by newspapers, magazines, lectures, motion pictures and conferences, of authentic popular information on science has been organized under the joint auspices of the National Research Council, the National Academy of Sciences, the American Association for the Advancement of Science, the Scripps Estate, and a group of professional journals. The editor and secretary is Dr. E. E. Slosson, a well-known writer and scientist, formerly associate editor of the *Independent* (New York), and the manager is Mr. Howard D. Wheeler, formerly managing editor of *Harper's Weekly*. The Science Service has temporary headquarters in the building of the National Research Council.

International relations among scientific organizations have been initiated and fostered by National Research Council. Growing partly out of the war work and partly out of pre-war connections, the international associations will be particularly helpful in those branches of science and technology requiring information gathered by observation in many parts of the world.

So broad are the interests and so extended the connections of mining and metallurgical men, that there is not a division of National Research Council whose work lacks definite usefulness to them at some time or in some phase. A perusal of the annual report of the Council, which can be had on request, would clearly show this fact. Of special interest, however, are the Division of Engineering, Division of Research Extension, Research Information Service, Division of Chemistry and Chemical Technology, and Division of Geology and Geography. Space limitation precludes even the bare listing of the subjects of importance to the American Mining Congress, which have received consideration by the divisions named. There may be mentioned, simply by way of example: fatigue of metals, heat treatment of carbon steel, substitute deoxidizers, new uses for selenium and tellurium, physical changes in iron and steel below the thermal critical range, pulverizing, Neumann bands, hardness testing, welding, molding sand, ceramics (especially relating to refractories), explosives investigations, organizations of Alloys Research Association, collection of information about research laboratories and scientific personnel, establishment of a service for making sources of information available to inquirers and for answering questions directly, and various geological problems.

National Research Council is closely affiliated with the leading engineering societies and Engineering Foundation, especially through its Division of Engineering. Offices for the latter have been provided in Engineering Societies Building by Engineering Foundation, which contributes also to the financial support of the Division and some of its research projects. Mr. Charles F. Rand, chairman of Engineering Foundation, and a member of the Division of Engineering, is a past-president of the American Institute of Mining and Metallurgical Engineers and has long been active in the Institute's work. While in England with the delegation of American engineers, in June, he was made an honorary member of the Iron and Steel Institute, the Institution of Mining and Metallurgy, and the Institution of Mining Engineers.

Dr. Henry M. Howe, the distinguished iron and steel metallurgist, also a past-president of the American Institute of Mining and Metallurgical Engineers, was the first chairman and is now the Honorary Chairman of the Division of Engineering. Mr. Galen H. Clevenger, long identified with nonferrous mining and metallurgy, is a vice-chairman of the division. The other vice-chairman, also, is a member of the Institute. Of this division's thirty-eight members, eighteen are members of the American Institute of Mining and Metallurgical Engineers, although a number of them officially represent other societies on the division. Many other mining engineers and metallurgists are members of committees of the National Research Council. Among the engineering societies the Institute has been prominent as an active participant in the work of the Council. During the war, many Institute members served untiringly on committees of the Council engaged upon mining and metallurgical problems for the Government and the industries. Five members of the Institute were among the founders of National Research Council: Herbert Hoover, Van H. Manning, Charles F. Rand, Charles D. Walcott and Willis R. Whitney. Dr. Walcott is President of the National Academy of Sciences, and First Vice-Chairman of the National Research Council.

Valuable as are the specific scientific and technical achievements which National Research Council already has to its credit, and the greater achievements of these kind in its future, none nor all of them can outweigh the great benefits to our country and the world growing from the better personal appreciation, the higher mutual esteem, and the effective co-operation which National Research Council is helping to bring about among scientists, technologists and industrialists. National Research Council exists to serve. Through service it expects "to have and to hold" the steady, sympathetic backing of mining and metallurgical men.

MINING AND MARKETS REVIEWED BY LABOR DEPARTMENT

REPORTS received by the Labor Department from its representatives throughout the country on the unemployment situation shed some light upon mid-September conditions in the mining, iron and steel and allied industries. The east-south-central district reported no improvement in coal mining. In Tennessee and southeastern Kentucky, during July, out of a total of 300 mines each employing from 25 to 100 men, 132 were not operated. This is more than a third of the total in the district and represents large normal production. Such mines as were operated were not running more than two or three days per week, excepting those loading fuel for the railroads. The demand was far short of normal. In western Kentucky many mines were still idle; those that were working were operating only two days per week. In Alabama there were partly employed approximately 80 percent of the number reported at the beginning of the year.

The South Atlantic district reported 22 coal mine operators in Virginia as employing 6,349 men, a decrease of 126 from previous figures. Operators generally were discouraged as to the outlook, while some confident that conditions would improve in the near future.

Unemployment continued in iron and steel. The reopening of mines in the east-north-central district for the fall trade was helping business and creating a tone of optimism. Signs of improvement in the steel industry were also evident in the middle-Atlantic district.

Mining in general in the Rocky Mountain district continued much restricted, with the exception of coal mines, which were beginning to pick up.

BRITISH STEEL MAKERS APPEAR BEFORE SENATE COMMITTEE

PRECEDENTS WERE DESTROYED when four representatives of the English high-speed steel manufacturing industry were present at a session of the Senate Finance Committee, urging that body to make changes in the Fordney Bill in order that their industry might be saved from "prohibitive duties." The delegation was headed by Arthur Balfour and was officially present as a representation from the Sheffield Chamber of Commerce, being the first group of foreign manufacturers to ever appear before a Congressional committee considering the tariff.

Mr. Balfour's statement centered in a depiction of what the proposed duties would do to the English high-speed steel industry. He cited the economic conditions existing in England at present as an argument against the handicapping of his industry through the high duties proposed. Senator Smoot directed his attention to the fact that this country faces similar problems. The witness stated that his interest would be pleased with nothing better than a continuance of the present tariff rate, but saw that this was impossible.

Mr Balfour asked the committee that the ad valorem on high-speed steel valued at 40 cents or more per lb. be reduced from the present proposal of 20 percent to 10 percent and that the compensatory duty on tungsten steel be reduced from 72 to 35 cents per lb. General opinion around the committee room was to the effect that the British interests had not greatly strengthened their position through appearing before the committee.

Digest of information on mineral tariffs compiled by the tariff division of

	Antimony.	Arsenic.	Asbestos.	Barytes.	Bismuth.	Cadmium.	Chromite.
Present tariff classification: Schedule	Prepared, C; ore, free list.	Free list.	Manufactured, N; unmanufactured, free list.	A.	Free list.	Free list.	Free list.
Paragraph	Prepared, 144; ore, 396.	403.	Manufactured, 367; unmanufactured, 406.	51.	418.	439.	102.
Rate	Prepared, 25 per cent ad valorem; ore, free.	Free.	Manufactured, 20 per cent ad valorem; unmanufactured, free.	15 per cent and 20 per cent ad valorem.	Free.	Free.	Free.
Unit of measure	Short tons.	Short tons.	Short tons.	Short tons.	Pounds.	Pounds.	Long tons.
Imports from foreign countries: Prewar	7,528 (1914).	1,594 (1914).		24,243 (1914).	133,190 (1914).	1,543 (1914).	80,736.
War time	15,233 (1918).	1,847 (1918).	134,108 (1917).	None.	75,611 (1918).	None (1918).	100,142.
Present (latest available data).	10,143 (1920).	4,000 (1920).	135,861 (1919).	10,000 (estimated), (1920).	72,771 (1920).	No data (1920).	61,404.
Imported from	China, Mexico.	Canada, Mexico.	Canada, South Africa, England (manufactured).	Germany.	England, South America (Bolivia).	Germany, England.	New Caledonia, Rhodesia, Canada, Costa Rica, Cuba.
Labor cost per diem respectively in those countries.	China, $0.45; Mexico, $1.10.	Canada, $2.50; Mexico, $1.10.	Canada, $2.50; Africa, $0.50.	Germany, $0.78.	England, $2; Bolivia, $1.25.	Germany, $0.78; England, $2.	New Caledonia, convict labor; Rhodesia, $0.75; Canada, $2.50; Costa Rica, $1.25; Cuba, $2.
Relative trade balance of those countries with the United States.	China, creditor; Mexico, debtor.	Canada, debtor; Mexico, debtor.	Canada, debtor.	Germany, debtor.	England, debtor; Bolivia, creditor.	Germany, debtor; England, debtor.	New Caledonia, creditor; Rhodesia, creditor; Canada, debtor, Costa Rica, creditor, Cuba, creditor.
Present exchange rates of those countries with the United States.	China, 1 tael=71 cents; Mexico, 1 peso=51 cents.	Canada, $1=89 cents; Mexico, 1 peso=51 cents.	Canada, $1=89 cents.	Germany, 1 mark=1½ cents.	England, £1=$3.83; Bolivia, 1 boliviano=33 cents.	Germany, 1 mark=1½ cents; England, £1=$3.83.	New Caledonia, 1 franc=7 cents; Rhodesia, £1=$3.83; Canada, $1=89 cents.
Nature and extent of ore deposits: Foreign	China, large and cheaply mined; Mexican, antimonial lead an important source.	Canada, by-product from cobalt ores; Mexico, smelter by-product.	Canada, large low-grade deposits extensively developed; South Africa, both high and low grade deposits not so well developed.	German deposits large.	England refines Australian and Tasmanian ores cheaply; Bolivia refines own ores.	Prior to 1907 Germany sole producer; England produces less than Germany.	Rhodesia and Caledonia extensive; Canada, scattered.
United States	Large resources; antimonial lead stibinite deposits not developed.	Large resources unassociated with other minerals and also as a by-product.	Large but undeveloped; need large capital investment.	Large deposits, both developed and undeveloped in South and Middle West.	Recovered as by-product of smelting, in quantities ample for domestic needs when market justifies.	By-product; recovery newly undertaken since 1916; quantity recoverable sufficient for needs.	Extensive, but undeveloped.
Cost of production: Foreign	4¾ cents per pound.	6 cents per pound.	25 cents per pound.	$1.50-$3.75.	$0.75-$1.10 per pound.	75 cents per pound.	$6.50 per ton.
United States	14 cents per pound.	11 cents per pound.	37 cents per pound.	$7.97.	$1.75-$2.14 per pound.	$1-$1.69 per pound.	$35 per ton.
Prevailing prices: Prewar	7 cents per pound.	14 cents.	$300 per ton (1914).	$3.37 f. o. b. mine.	$2.05 per pound (1913).	89 cents per pound (1914).	$12.75.
War time	21 cents per pound.	12 cents.	$1,800 per ton (1917).	$8.02 f. o. b. mine.	$3.50 per pound (1918).	$1.48 per pound (1918).	$47.99.
Present (latest available data).	6½ cents per pound.	10 cents.	$2,000 per ton (1920).	$10-$11.25 f. o. b. mine.	$1.35 per pound (1921).	$0.75-$1 per pound (1921).	$22.50-$42.50.
Annual production in United States: Prewar	2,705 (short tons).	4,670 (1914).	1,479 (1914).	52,747 (1914).	213,554 (1913).	54,198 (1913).	591 long tons.
War time	24,377.	6,323 (1918).	1,683 (1918).	155,368 (1918).	318,187 (1917).	207,408 (1917).	82,430.
Present (latest available data)	3,963 (estimated).	11,281 (1920).	1,500 (1920).	180,000 (1920).	269,831 (1920).	129,283 (1920).	3,900.
States in which produced.	Colorado, Arizona, New Mexico, California, Utah, Alaska, Idaho.	Nevada, Washington, Montana, Utah, Colorado, California,	Vermont, Arizona. New Mexico, California, Georgia, Maryland, Oregon.	Missouri, Georgia, Tennessee, Illinois, Maryland, Virginia, North and South Carolina (18 other States, making 26 in all).	Colorado, Utah, California, Idaho, Missouri, Kansas.	Colorado, Utah, California, Ohio, Illinois, Delaware.	California, Colorado, Oregon, Wyoming, Pennsylvania, Maryland, Alaska.
Number of people dependent on this industry for support.	1,100.	1,500.	100,000 (including manufactured).	22,000.	Included in employees of smelting industries.	Included in employees of smelting industries.	2,500.
Approximate investment.	$10,000,000.	$5,000,000.	$25,000,000.	$15,000,000.	Included in investments in smelting	Included in investments in smelting	$4,500,000.

	Feldspar.	Fluorspar.	Graphite.	Gypsum.	Kaolin (white china clay).	Lead.	Lime.
Present tariff classification: Schedule	Not listed.	Not listed.	Free list.	B.	B.	C.	B.
Paragraph			579.	74.	76.	152 and 153.	73.
Rate	Free.	Free.	Free.	30 cents per ton.	$1.25 per ton.	Ore, three-fourths cent pound; metal, 25 per cent advalorem.	5 per cent ad valorem.
Unit of measure	Short tons.	Short tons.	Short tons.	Short tons.	Short tons.	Short tons.	Short tons.
Imports from foreign countries: Prewar	18,060 (1914).	22,682 (1913).	21,990 (1914).	369,214 (1914).	328,038 (1914).	11,452 (average) (1910-15).	3,455 (1914).
War time	19,488 (1916).	13,616 (1917).	19,498 (1918).	240,269 (1917).	241,029 (1917).	7,781 (average) (1916-18).	7,353 (1917).
Present (latest available data).	20,232 (1918).	20,000 (1920).	32,500 (1920).	300,000 (estimated) (1920).	180,592 (1919).	158,802, present yearly rate September-December, 1920.	6,050 (1918).
Imported from	Canada.	England, Canada.	Ceylon, Austria, Madagascar.	Canada.	England.	Mexico, Spain, Australia, Germany, Canada, South America.	Canada.
Labor cost per diem respectively in those countries.	Canada, $2.50.	England, $2; Canada, $2.50.	Ceylon, $0.24; Austria, $0.42; Madagascar, $0.32.	Canada, $2.50.	England, $2.	Mexico, $1.10; Spain, $0.98; Germany, $0.78; Canada, $2.50; South America (average) $1.25.	Canada, $2.50.
Relative trade balance of those countries with the United States.	Canada, debtor.	England, debtor; Canada, debtor.	Ceylon, creditor; Austria, debtor; Madagascar, creditor.	Canada, debtor.	England, debtor.	Mexico, debtor; Spain, debtor; Germany, debtor; Canada, debtor; South America, creditor.	Canada, debtor.
Present exchange rates of those countries with the United States.	Canada, $1=89 cents.	England, £1=$3.83; Canada, $1=89 cents.	Ceylon, £1=$3.83; Austria, 1 krone=⅓ cent; Madagascar, 1 franc=74 cents.	Canada, $1=89 cents.	England, £1=$3.83.	Mexico, 1 peso=51 cents; Spain, 1 peseta=14 cents; Germany, 1 mark=1 cent; Canada, $1=89 cents; Australia, £1=$3.83.	Canada, $1=89 cents
Nature and extent of ore deposits: Foreign	Extensive deposits; common mineral.	Large tonnage comes in as ballast.	Many years of development of large deposits gives them great advantage.	Old well-established deposits well developed.	Old established development; high-grade material.	Old well-established industry.	Common mineral widely distributed
United States	Large, valuable deposits; should be more largely developed.	Large tonnage, good grade, widely distributed; superior to foreign.	Large reserves of all grades; development primitive; needs stabilized market.	Resources vast; development progressing rapidly.	Immense reserves high-grade material; development growing rapidly.	Mammoth deposits, well developed.	Common mineral widely distributed
Cost of production: Foreign	$3.25.	$7.	6 cents per pound.	$1.	$10.	4 cents per pound.	$6.50 per ton.
United States	$5.15.	$13.50.	10 cents per pound.	$2.	$16.	6 cents per pound.	$8 per ton.
Prevailing prices: Prewar	$3.46 (1915).	$6.37 (1913).	6½ cents to 8 cents per pound.	$1.75.	$5.88 (1914).	$4.37 (average 1910-1915).	$3.92 (1914).
War time	$3.40 (1917).	$10.45 (1917).	10 cents to 17½ cents per pound.	$2.71.	$5.46 (1917).	$7.69 (average 1916-1918).	$6.29 (1917).
Present (latest available data).	$8.50 (1916).	$25 (1920).	4 cents per pound (Madagascar flake).	$2.15.	$10.88 (1919).	4 cents (present Feb. 25, 1921).	$8.36 (1918).
Annual production in United States: Prewar		115,580 short tons (1913)	5,000 tons.	2,476,465 (1914).	34,191 (1914).	457,500 (average, 1910-1915).	3,380,928 (1914).
War time	126,715 long tons.	218,828 short tons (1917)	13,593 (1916).	2,693,226 (1917).	31,885 (1917).	567,300 (average, 1916-1918).	3,786,364 (1917).
Present (latest available data)	88,498 long tons.	286,000 short tons (1920)	167,879 (1917).	2,340,000 (1919).	39,000 (1919).	430,000 (yearly rate).	3,206,016 (1918).
States in which produced.	New York, Vermont, Georgia, Maine, North Carolina, California, Virginia, Pennsylvania, Connecticut, Maryland, New Jersey, New Hampshire.	Illinois, Tennessee, Kentucky, New Mexico, Colorado, Arizona, New Hampshire, Nevada, Utah, Washington.	Montana, Pennsylvania, Alabama, New York, Colorado, Texas, Georgia.	New York, Alaska, Iowa, California, Michigan, Nevada, Illinois, Oklahoma, Minnesota, Utah, Washington, Ohio, Wisconsin, New Mexico.	Georgia, California, Delaware, Texas, Missouri, Florida, North Carolina, South Carolina, Pennsylvania, Utah.	Missouri, Washington, Idaho, Oklahoma, Utah, Kansas, Colorado, Arkansas, Tennessee, Wisconsin, Montana, Illinois, California, Arizona, New Mexico.	Washington, Arizona, Pennsylvania, Kansas, Ohio, New Mexico, Colorado, West Virginia, Tennessee, Michigan, Montana, Massachusetts, California, and other.
Number of people dependent on this industry for support.	7,500.	8,500.	4,500.	8,000.	10,000.	300,000.	16,000.
Approximate investment.	$5,000,000.	$16,000,000.	$7,500,000.	$17,000,000.	$12,000,000.	$400,000,000.	$30,000,000.

...iffs compiled by the tariff division of the American mining congress.

Lead.	Lime.	Manganese.	Magnesite.	Marble.	Mica.	Molybdenum.	Monazite and thorium.	Pyrites.	Pumice.	Potash.	Quicksilver.	Talc.	Tungsten.	Zinc.
	B	Free list	B and free list	B	B	C	C	Free list	B	Free list	C	A	Ferro, C; ores, free list.	A; C.
...and 153	73	540	71 and 539	97 and 98	77	102	154	617	75	580	159	69	Ferro, 102; ores, 633	61; 162-163.
..., three-fourths cent ...ound; metal, 25 per ...ent ad valorem.	5 per cent ad valorem	Free	10 per cent ad valorem and free.	50 cents per cubic foot.	4 cents per pound and 25 per cent ad valorem.	20 and 25 per cent ad valorem on ferro-molybdenum.	25 per cent ad valorem.	Free	5 per cent ad valorem	Free	10 per cent ad valorem.	15 per cent ad valorem.	20 per cent ad valorem; ores, free.	10-15 per cent; 10 and 15 per cent.
...rt tons	Short tons	Short tons	Short tons	Blocks, cubic foot; slabs, linear foot.	Sheet pounds; scrap and ground, tons.	Pounds	Pounds	Long tons	Short tons	Short tons	75-pound flasks	Short tons	Short tons	Short tons.
...452 (average) (1910-...5).	3,455 (1914)	283,294	135,170	643,446-275,888 (1913)	360,880-404,848 pounds.		Monazite, 1,873,971; thorium, 101,927 (1915).	1,026,617	Unmanufactured, 5,558 (1913).	207,089	8,198	18,882 (1916)	1,530 (1913)	Ore (average), 61,348; slab, 5,941.
...1 (average) (1916-...8).	7,353 (1917)	491,303	24,481	267,250-124,935 (1917)	741,429-11,587 pounds	178,222	Monazite, 5,828,270; thorium, 1,188 (1917).	496,792	Unmanufactured, 3,900 (1918).	7,957	6,719	14,169 (1918)	11,750 (1918)	Ore (average), 199,261; slab, 420.
...,802, present yearly ...ate September-De...ember, 1920.	6,650 (1920)	333,344	15,852	479,691 (1920)	1,375,927-62 pounds	106,743	Monazite, 632,568; thorium, 3,307 (1919)	388,973		40,629 (estimated 40,000).	16,800 (1920)	24,000 (1920)	4,320 (1920)	Ore (average), 53,510; slab, 2,590.
...exico, Spain, Aus...ralia, Germany, Canada, South America.	Canada	India, Russia, Brazil, Cuba.	Austria, Canada, Greece, Mexico, Venezuela.	Italy, France, Mexico, Belgium.	India, Canada, Germany, Brazil.	Canada, Australia, Norway, Japan, Peru.	Brazil, India	Spain, Canada, Portugal.	Italy	Germany, France	Spain, Italy, Austria	Canada, Italy, France, England (as merchant for provinces).	China, Burma, Bolivia.	Mexico, Belgium, Germany, Australia.
...exico, $1.10; Spain, $0.98; Germany, $0.78; Canada, $2.50; South America (average) $1.25.	Canada $2.50	India, $0.24; Brazil, $1; Cuba, $1.25.	Austria, $0.62; Canada, $2.50; Greece, $1.85; Mexico, $1.10; Venezuela, $1.25.	Italy, $1.76; France, $1.12; Mexico, $1.10; Belgium, $1.80.	India, $0.24; Canada, $2.50; Germany, $0.78; Brazil, $1.25.	Canada, $3.50; Australia, $3; Norway, $1; Japan, $0.67; Peru $1.25.	Brazil, $1.25; India, $0.24.	Spain, $0.78; Canada, $3; Portugal, $0.85.	Italy, $1.76	Germany, $0.78; France, $1.12.	Spain, $0.78; Italy, $1.76; Austria, $0.62.	Canada, $3; Italy $1.76; France, $1.12; England, $0.75 (average).	China $0.45; Burma, $0.40; Bolivia, $0.90.	Mexico, $1.10; Belgium, $1.44; Germany, $0.78; Australia, $3.
...exico, debtor; Spain, debtor; Germany, debtor; Canada, debtor; South America, creditor.	Canada debtor	India, creditor; Russia, debtor; Brazil, creditor; Cuba, creditor.	Austria, debtor; Canada, debtor; Greece, debtor; Mexico, debtor; Venezuela, debtor.	Italy, debtor; France, debtor; Mexico, Belgium, debtor.	India, creditor; Canada, debtor; Germany, debtor; Brazil, creditor.	Canada, debtor; Australia, debtor; Norway, debtor; Japan, creditor; Peru, creditor.	Brazil, creditor; India, creditor.	Spain, debtor; Canada, debtor; Portugal, debtor.	Italy, debtor	Germany, debtor; France, debtor.	Spain, debtor; Italy, debtor; Austria, debtor.	Canada, debtor; Italy, debtor; France, debtor; England, debtor.	China, creditor; Burma, creditor; Bolivia, creditor.	Mexico, debtor; Belgium, debtor; Germany, debtor; Australia, debtor.
...exico, 1 peso=51 cents; Spain, 1 peseta=14 cents; Germany, 1 mark=1 cent; Canada, $1=89 cents; Australia, £1=$3.83.	Canada $1=89 cents.	India, £1=$3.83; Brazil, 1 milreis=14 cents; Cuba, 1 peso=$1.	Austria, 1 krone=½ cent; Canada, $1=89 cents; Greece, 1 drachma=12 cents; Mexico, 1 peso=51 cents.	Italy, 1 lira=4 cents; France, 1 franc=7 cents; Mexico, 1 peso=51 cents; Belgium, 1 franc=7 cents.	India, £1=$3.83; Canada, $1=89 cents; Germany, 1 mark=1 cent; Brazil, 1 milreis=14 cents.	Canada, $1=89 cents; Australia, £1=$3.83; Norway, 1 krone=18 cents; Japan, 1 yen=49 cents; Peru, 1 libra=$4.73.	Brazil, 1 milreis=14 cents; India, 1 rupee=28½ cents.	Spain, 1 peseta=14 cents; Canada, $1=89 cents; Portugal, 1 escudo=21 cents.	Italy, 1 lira=4 cents	Germany, 1 mark=1 cent; France, 1 franc=7 cents.	Spain, 1 peseta=14 cents; Italy, 1 lira=4 cents; Austria, 1 krone=½ cent.	Canada, $1=89 cents; Italy, 1 lira=4 cents; France, 1 franc=7 cents; England, £1=$3.83.	China, 1 tael=71 cents; Burma, 1 rupee=38 cents; Bolivia, 1 boliviano=33 cents.	Mexico, 1 peso=51 cents; Belgium, 1 franc=7 cents; Germany, 1 mark=1½ cents; Australia, £1=$3.83.
...ld well-established industry.	Common mineral widely distributed.	Old established, well-developed deposits.	Large deposits in Austria; principal source of imports.	Italy main source of imports; deposits large and well developed.	Industry old and well developed; deposits large; low-paid labor in India.	Norway deposits large; reduced by hydro-electric power.	Deposits of Brazil and India in large beds of seacoast sand, so labor cost is especially low.	Spanish deposits principal competitor; mined as by-product of copper and sold regardless of mining cost.	Italian pumice a lava deposit that must be ground.	German potash has monopolized all markets for years and is now trying to regain its domination.	Spanish and Italian deposits largely Government monopolies. Imports of quicksilver into these countries are embargoed.	70 per cent from Canada, high-grade deposits cheaply mined; established industry.	Surface deposits; hand labor at a few cents per day. Before the war Germany monopolized tungsten refining.	Mexican and Australian deposits immense. Belgium and Germany refiners and export finished zinc.
...fammoth deposits, well developed.	Common mineral, widely distributed.	Immense reserves; development just begun; increased 3,000 per cent during the war.	Large high-grade deposits in California and Washington; immense resources.	Deposits large and high grade; can successfully compete with Italian if protected.	Large both high and medium grades; development primitive; with protection can be made great industry.	Largest and most important deposits in world in United States.	Deposits large and high grade but must be concentrated.	Large and high-grade with valuable by-products capable of immense expansion and development.	Deposits large but far from market; lower grade suitable for cleansers.	Reserves enormous enough to supply United States for generations if protected in development.	Deposits large grade of ore compels extensive refining; operations possible with protection.	Large domestic resources discovered and developed during war; able to supply our needs.	Extensive enormous growth during war freed United States from German domination.	Deposits large, rich, and adequate for all domestic purposes and for export.
...cents per pound	$0.50 per ton	$12 per ton	$10-$12.50 per ton	$1.50 per cubic foot	Sheet, 15 cents per pound; scrap, $25 per ton.	50 cents per pound MoS_2.	Monazite, 6 cents per pound; thorium, $4.	Spanish cost can be estimated at naught, as they sell for cost of freight.	$13.50 per ton	$1 per unit K_2O	$30 per flask	$12.25 per ton (crude)	$2.50-$10 per unit	5 cents per pound, zinc.
...cents per pound	$8 per ton	$35 per ton	$18-$24 per ton	$2.83 per cubic foot	Sheet, 40 cents per pound; scrap, $100 per ton.	95 cents per pound MoS_2.	Monazite, 21 cents; thorium, $7.	11 cents per unit	$39.91 per ton, f. o. b. New York.	$1.75 per unit K_2O	$75 per flask	$17.50 per ton (crude)	$17 per unit WO_3	7½ cents per pound, zinc.
$4.37 (average 1910-1915).	$3.92 (1914)	$10.39	$15.20-$15.72	$2.20 per cubic foot	Sheet, 25 cents per pound; scrap, $82 per ton.		Monazite, 12 cents per pound; thorium, $6.53 (1905).	9½ cents per unit of sulphur.	$8 (1913) at Italian ports.	$1 per unit K_2O	$48.35 (1913)	$9.51 per ton (1916)	$7.32 (1913)	$6.08 per pound (average).
$7.60 (average 1916-1918).	$6.29 (1918)	$35	$19.10	$3.85 per cubic foot	Sheet, 60 cents per pound; scrap, $122 per ton.	$1.45 per pound MoS_2, $4.50.	Monazite, 6½ cents per pound; thorium, $8 (1917).	25 cents-33 cents		$6 per unit K_2O	$123.47 (1918)	$10.91 per ton (1918)	$30, and as high as $92.50.	$12.22 per pound (average).
4 cents (present Feb. 25, 1921).	$8.36 (1919)	$18 (present)	$30-35 (crude), $50-$60 (talc).	$3 per cubic foot	Sheet, 40 cents per pound; scrap, $60 per ton.	$0.75 per pound MoS_2, $2.25.	Monazite, 7½ cents per pound; thorium, $3.75 (1919).	12 cents-16 cents	$13.50 (1920) at Italian ports.	$2 per unit K_2O	$40 (1920)	$20 per ton (1920)	$2.75 (1921)	$5.20 per pound (average).
157,500 (average, 1910-1915).	3,380,928 (1914)	2,635	11,293	3,161,997 cubic feet (1914).	556,933 pounds, 3,730 short tons.	1,297 pounds MoS_2	1,341,418 (1905)	336,662 long tons	27,591 tons (1914)		16,548 flasks	193,309 tons (1916)	1,537 (1913)	332,916.
567,399 (average, 1916-1918).	3,786,364 (1917)	305,869	231,605	3,575,670 cubic feet (1918).	1,644,200 pounds, 2,292 short tons.	861,637 pounds MoS_2	22,000 (1917)	464,491	35,293 (1917)	51,803	32,883 flasks	191,477 tons (1918)	6,141 (1917)	658,515 (1916-17).
330,000 (yearly rate).	3,206,016 (1918)	58,243 (1919)	164,696	4,675,000 cubic feet (1920).	1,500,000 pounds, 1,800 short tons.		No recorded production 1920.	380,000		36,899	21,318 flasks	213,000 tons (1920)	None (1920)	464,000.
Missouri, Washington, Idaho, Oklahoma, Utah, Kansas, Colorado, Arkansas, Tennessee, Wisconsin, Montana, Illinois, California, Arizona, New Mexico.	Washington, Arizona, Pennsylvania, Kansas, Ohio, New Mexico, Colorado, West Virginia, Tennessee, Michigan, Montana, Massachusetts, California, and other.	Arkansas, Virginia, Montana, West Virginia, Colorado, Georgia, Minnesota, Tennessee, Nevada, California, New Mexico, Arizona, Vermont, Oregon, Utah, Texas.	Washington, California.	Alabama, Pennsylvania, Alaska, Massachusetts, New Mexico, Arizona, Missouri, Oregon, Arkansas, New York, Michigan, California, North Carolina, Washington, Colorado, Tennessee, Georgia, Texas Maryland, Vermont.	North Carolina, Virginia, South Carolina, Idaho, Georgia, New Mexico, Colorado, South Dakota, Alabama, New Hampshire.	Texas, Wyoming, Maine, Colorado, New Mexico, Arizona, Alaska, California.	North Carolina, South Carolina, Idaho, Florida.	Virginia, California, Georgia, New York, North Carolina, South Carolina, Utah.	California, Colorado, Arizona, Utah, Nebraska, New Mexico, Kansas, Idaho, Oregon, Washington, Nevada.	Nebraska, Utah, New Jersey, California, Colorado.	California, Texas, Idaho, Nevada, Oregon, Arizona.	Vermont, Massachusetts, New York, California, North Carolina, Georgia, Maryland, Pennsylvania, New Jersey.	California, Idaho, Colorado, Montana, Nevada, Oregon, Arizona, New York, Washington, Alaska, South Dakota.	Missouri, Utah, Kansas, Illinois, Oklahoma, Pennsylvania, New Jersey, New Mexico, Montana, Arizona, Wisconsin, West Virginia, Colorado, Tennessee, Idaho.
...0,000	16,000	7,500	3,000	15,000	5,000	1,000	250	5,000	1,200	15,000	4,500	7,500	8,500	100,000.
...00,000,000	$30,000,000	$15,000,000	$13,000,000	$32,000,000	$5,000,000	$6,500,000	$50,000	$10,000,000	$5,000,000	$45,000,000	$8,500,000	8,575,000	$15,500,000	$300,000,000.
...-50 per cent of properties closed down; practically all operations solely to keep organization together in hope of relief; low foreign wage and ocean freight.	Canadian competition offers special problem to border States industry to be corrected by tariff.	Operating about 5 per cent of capacity; possibilities under protection enormous.	Completely shut down due to foreign competition.	Operating but needs protection to justify increased investment by assured continuous operation.	Sustained production; growing despite handicap of foreign competition; protection imperative to interest investment.	While in expensive development stage and conducting educational campaign to increase use, needs protection from foreign low costs.	Removal of protection in 1909 and 1913 ruined this industry; can be again built up under protection.	Spanish mines will dump pyrites here for cost of freight as ballast; protection against this dumping urgent.	Domestic pumice filled part of demand during war time; development under protection dubious.	Industry developed from nothing to present size during war. Unless protected will disappear; one of the key industries.	Above Government monopolies dumping 2,000 flasks per month here. Our industry closed; continuance a military necessity.	Canadian competition most serious; when talc is dumped here domestic market is broken.	Stabilized prices by protection against wide ranges foreign prices under dumping methods now used will permit operation of this key industry.	More than 75 per cent of all operations closed down; higher American labor costs, 8-hour day, and higher freight; foreign zinc is being dumped here.
...per cent	One-fourth...													

pound....	$6.50 per ton				ton.			as they sell for cost of freight.						
pound....	$8 per [illegible]	$35 per ton	$18-$24 per ton	$2.83 per cubic foot	Sheet, 40 cents per pound; scrap, $100 per ton.	95 cents per pound MoS_2.	Monazite, 21 cents; thorium, $7.	11 cents per unit	$39.94 per ton, f. o. b. New York.	$1.75 per unit K^2O	$75 per flask	$17.50 per ton (crude)	$17 per unit WO_3	7½ cents per pound, zinc.
rage 1910-	$3.92 (1914)	$10.39	$15.20-$15.72	$2.20 per cubic foot	Sheet, 25 cents per pound; scrap, $82 per ton.		Monazite, 12 cents per pound: thorium, $6.53 (1905).	9½ cents per unit of sulphur.	$8 (1913) at Italian ports.	$1 per unit K^2O	$18.35 (1913)	$9.51 per ton (1916)	$7.32 (1913)	$6.08 per pound (average).
rage 1916-	$6.29 (1917)	$35	$19.10	$3.85 per cubic foot	Sheet, 60 cents per pound; scrap, $122 per ton.	$1.45 per pound MoS_2, $4.50.	Monazite, 6½ cents per pound; thorium, $8 (1917).	25 cents-33 cents		$6 per unit K^2O	$123.47 (1918)	$10.91 per ton (1918)	$80, and as high as $92.50.	$12.22 per pound (average).
esent Feb.	$8.36 (1918)	$18 (present)	$30-35 (crude), $50-$60 (talc).	$3 per cubic foot	Sheet, 40 cents per pound; scrap, $60 per ton.	$0.75 per pound MoS_2, $2.25.	Monazite, 7½ cents per pound; thorium, $3.75 (1919).	12 cents-16 cents	$13.50 (1920) at Italian ports.	$2 per unit K^2O	$40 (1920)	$20 per ton (1920)	$2.75 (1921)	$5.20 per pound (average).
erage, 1910-	3,380,928 (1914)	2,635	11,293	3,161,997 cubic feet (1914).	556,933 pounds, 3,730 short tons.	1,297 pounds MoS_2	1,341,418 (1905)	336,662 long tons	27,591 tons (1914)		18,548 flasks	193,309 tons (1916)	1,537 (1913)	332,916.
erage, 1916-	3,786,361 (1917)	305,869	231,605	3,575,670 cubic feet (1918).	1,644,200 pounds, 2,292 short tons.	861,637 pounds MoS_2	22,000 (1917)	464,491	35,293 (1917)	51,803	32,883 flasks	191,477 tons (1918)	6,141 (1917)	658,515 (1916-17).
arly rate)...	3,206,016 (1919)	58,243 (1919)	164,696	4,678,000 cubic feet (1920).	1,500,000 pounds, 1,800 short tons.		No recorded production 1920.	380,000		36,899	21,348 flasks	213,000 tons (1920)	None (1920)	464,000.
Vashington, Oklahoma, insas, Colo- ansas, Ten- Wisconsin, , Illinois, , Arizona, rico.	Washington, Arizona, Pennsylvania, Kansas, Ohio, New Mexico, Colorado, West Virginia, Tennessee, Michigan, Montana, Massachusetts, California, and other.	Arkansas, Virginia, Montana, West Virginia, Colorado, Georgia, Minnesota, Tennessee, Nevada, California, New Mexico, Arizona, Vermont, Oregon, Utah, Texas.	Washington, California.	Alabama, Pennsylvania, Virginia, Alaska, Massachusetts, New Mexico, Arizona, Missouri, Oregon, Arkansas, New York, Michigan, California, North Carolina, Washington, Colorado, Tennessee, Georgia, Texas, Maryland, Vermont.	North Carolina, Virginia, South Carolina, Idaho, Georgia, New Mexico, Colorado, South Dakota, Alabama, New Hampshire.	Texas, Wyoming, Maine, Colorado, New Mexico, Arizona, Alaska, California.	North Carolina, South Carolina, Idaho, Florida.	Virginia, California, Georgia, New York, North Carolina, South Carolina, Utah.	California, Colorado, Arizona, Utah, Nebraska, New Mexico, Kansas, Idaho, Oregon, Washington, Nevada.	Nebraska, Utah, New Jersey, California, Colorado.	California, Texas, Idaho, Nevada, Oregon, Arizona.	Vermont, Massachusetts, New York, California, North Carolina, Georgia, Maryland, Pennsylvania, New Jersey.	California, Idaho, Colorado, Montana, Nevada, Oregon, Arizona, New York, Washington, Alaska, South Dakota.	Missouri, Utah, Kansas, Illinois, Oklahoma, Pennsylvania, New Jersey, New Mexico, Montana, Arizona, Wisconsin, West Virginia, Colorado, Tennessee, Idaho.
	16,000	7,500	3,000	15,000	5,000	1,000	250	5,000	1,200	15,000	4,500	7,500	8,500	100,000.
	$30,000,000	$15,000,000	$13,000,000	$32,000,000	$5,000,000	$6,500,000	$50,000	$10,000,000	$5,000,000	$45,000,000	$8,500,000	8,575,000	$15,500,000	$300,000,000.
t of prop- ed down; all opera- y to keep on together elief; low age and it.	Canadian competition offers special problem to border States industry to be corrected by tariff.	Operating about 5 per cent of capacity; possibilities under protection enormous.	Completely shut down due to foreign competition.	Operating but needs protection to justify increased investment by assured continuous operation.	Sustained production; growing despite handicap of foreign competition; protection imperative to interest investment.	While in expensive development stage and conducting educational campaign to increase use, needs protection from foreign low costs.	Removal of protection in 1909 and 1913 ruined this industry; can be again built up under protection.	Spanish mines will dump pyrites here for cost of freight as ballast; protection against this dumping urgent.	Domestic pumice filled part of demand during war time; development under protection dubious.	Industry developed from nothing to present size during war. Unless protected will disappear; one of the key industries.	Above Government monopolies dumping 2,000 flasks per month here. Our industry closed; continuance a military necessity.	Canadian competition most serious; when talc is dumped here domestic market is broken.	Stabilized prices by protection against wide ranges foreign prices under dumping methods now used will permit operation of this key industry.	More than 75 per cent of all operations closed down; higher American labor costs, 8-hour day, and higher freight; foreign zinc is being dumped here.
	One-fourth of 1 per cent	55 per cent	20 per cent	15 per cent	35 per cent	20 per cent	25 per cent	30 per cent	25 per cent	40 per cent	45 per cent	10 per cent	25 per cent	10 per cent.
	99¾ per cent	45 per cent	80 per cent	85 per cent	65 per cent	80 per cent	75 per cent	70 per cent	75 per cent	60 per cent	55 per cent	90 per cent	75 per cent	90 per cent.
ound on , copper 2½ cents , dross s, bars, nts per ts, pipe, s, wire, nts per ite lead tc.	Quicklime, bulk, 30 cents per 100 pounds; 50 cents per 100 pounds quicklime in cooperage; hydrated, 40 cents per 100 pounds; pulverized, $1 per ton bulk; $1.50 sacked.	Ores, 40 cents per unit of manganese content; ferro, $1 per unit of manganese content.	Ore, ½ cent per pound; calcined, ¾ cent per pound; brick, ¾ cent per pound.	Marble, onyx, and breccias and limestones susceptible of polish in blocks, $1 per cubic foot; slabs less than 1 inch in thickness, 8 cents per linear foot; over 1 inch, 10 cents per linear foot; over 1½ inches, 12½ cents per linear foot; over 2 inches, $1 per cubic foot. 2 cents per foot additional if rubbed; finished marble, 75 per cent ad valorem.	Mica unfinished and rough, valued at not over 30 cents per pound, 10 cents per pound plus 30 per cent ad valorem; above 30 cents per pound, 30 per cent ad valorem; cut, stamped, and punched, 20 cents per pound plus 60 per cent ad valorem; splittings 30 per cent ad valorem; built up mica and all manufactures of mica, 60 per cent ad valorem; diaphragms, 10 cents plus 60 per cent ad valorem; crude, raw, scrap, refuse, fit only for grinding, 2 cents per pound; ground, flake and dust, 4 cents per pound.	50 cents per pound of MoS_2 in ores and concentrates, $1 per pound of Mo contained in ferromolybdenum, calcium molybdate and all other alloys and compounds of molybdenum including molybdenum steel.	15 cents per pound monazite sand; $3 per pound of thorium nitrate; $2 per pound on gas mantle scrap.	Cuprous, cupriferous or iron pyrites, $4 per ton.	Unmanufactured pumice stone, manufactured pumice stone, or manufactures of pumice, 1 cent per pound.	50 cents per unit K^2O	Quicksilver, 50 cents per pound; manufactured mercurial products, 50 cents per pound of mercury content and 33⅓ per cent ad valorem.	Talc steatite soapstone and French chalk, crude and unground, ½ cent per pound; washed, powdered, or pulverized, 1 cent per pound; cut or sawed or in the form of blanks, cubes, or crayons, 2 cents per pound (the rates in the Fordney bill).	On ores, $9 per unit WO^3 contained therein; on tungsten contained in ferrotungsten, tungsten metal, tungsten powder, and tungsten compounds, 90 cents per pound of tungsten contained therein; on high-speed tungsten tool steel and all alloy steels containing tungsten, 65 per cent ad valorem.	Ores less than 10 per cent zinc, free; ores over 19 per cent and less than 25 per cent, 1½ cents per pound on zinc content, ores and zinc drosses containing more than 25 per cent metallic zinc, 2 cents per pound on zinc content; blocks, pigs, or slabs, old and worn-out zinc fit only to be remanufactured, 2¾ cents per pound; zinc oxide, pigment containing zinc, not containing lead, dry, 2¾ cents per pound; sheets, plates, or otherwise fabricated, zinc dust, 3¾ cents per pound.
	2.	3.	1.	2.	2.	3.	Free list.	Free list.	2.	Free list.	3.	2.	3.	3.
	204.	302.	47.	233.	208.	302.	1616.	1663.	205.	1635.	383.	209.	302.	390.
nd mat- ts per oo, pigs, etc., 2½ pound; s, shot, 2¾ cents	Limestone, 5 cents per hundredweight; lime, 10 cents per hundredweight; hydrated lime, 12 cents per hundredweight.	1 cent per pound on metallic manganese contained in ore; 2½ cents per pound on manganese contained in ferromanganese.	Crude or ground; ¼ cent per pound; dead-burned or grained.	40 per cent ad valorem.	Unmanufactured or rough trimmed, 4 cents per pound and 17 per cent ad valorem; cut, trimmed, and manufactured, 10 cents per pound and 17 per cent ad valorem; ground, 4 cents per pound and 20 per cent ad valorem.	Ore or concentrates 75 cents per pound on metallic molybdenum contained therein; metallic molybdenum compounds and alloys, $1.25 per pound on metallic molybdenum contained.	Free	Free	Valued at less than $15 per ton, 0.2 cents per pound; valued above $15 per ton, 0.3 cents per pound; manufactured, 0.55 cents per pound; manufactures of pumice stone, 26 per cent ad valorem.	2½ cents per pound on contained potassium oxide for a period of 2 years; 2 cents per pound for the third year; 1½ cents per pound for the fourth year; 1 cent per pound for the fifth year; thereafter, free.	35 cents per pound	Crude, ⅛ cent per pound; ground, ½ cent per pound; cut or sawed, 1 cent per pound; manufactures not decorated, 25 per cent ad valorem; manufactures decorated, 30 per cent ad valorem.	Ore or concentrates 45 cents per pound metallic tungsten contained; ferrotungsten, metallic tungsten, tungsten powder, and all other compounds, 72 cents per pound on tungsten contained, plus 15 per cent ad valorem.	Ore containing less than 10 per cent of zinc, free; 10 per cent or more and less than 20 per cent, ½ cent per pound on zinc contained, 20 per cent or more or less than, 25 per cent, 1 cent per pound. 25 per cent or more, 1½ cents per pound; blocks, pigs, dust, 1¾ cents per pound; sheets, 1¾ cents per pound; sheets, coated or plated, 1¾ cents per pound; scrap, 1 cent pound: *Provided*, that 2 years after enactment of this act rates shall be: Blocks, pigs, and scrap, 2 cents per pound; sheets, plate or other forms, 2¼ cents per pound.

Cost of production: Foreign	[illegible] cents per pound	[illegible] cents per pound	[illegible] cents per pound	[illegible]	[illegible] per pound	[illegible] cents per pound	[illegible] per ton	$3.25	$7	6 cents per pound	$1	$10	4 cents per pound	$6.50 per ton	$12 per ton	[illegible]-$12.50 per ton	[illegible]
United States	14 cents per pound	11 cents per pound	37 cents per pound	$7.97	$1.75-$2.14 per pound	$1-$1.60 per pound	$35 per ton	$5.15	$13.50	10 cents per pound	$2	$16	6 cents per pound	$8 per ton	$35 per ton	$14-$24 per ton	$7.[illegible]
Selling prices: Prewar	7 cents per pound	14 cents	$300 per ton (1914)	$3.37 f. o. b. mine	$2.05 per pound (1913)	89 cents per pound (1914)	$12.75	$3.46 (1915)	$6.37 (1913)	6½ cents to 8 cents per pound	$1.75	$3.88 (1914)	$4.37 (average, 1910-1915)	$3.92 (1914)	$10.39	$15.20-$15.72	$2.[illegible]
War time	21 cents per pound	12 cents	$1,800 per ton (1917)	$8.02 f. o. b. mine	$3.50 per pound (1918)	$1.48 per pound (1918)	$47.99	$3.40 (1917)	$10.45 (1917)	10 cents to 17½ cents per pound	$2.74	$5.46 (1917)	$7.69 (average 1916-1918)	$6.29 (1917)	$35	$19.10	[illegible]
Present (latest available data)	6½ cents per pound	10 cents	$2,000 per ton (1920)	$10-$11.25 f. o. b. mine	$1.35 per pound (1921)	$0.75-$1 per pound (1921)	$22.50-$42.50	$8.50 (1918)	$25 (1920)	4 cents per pound (Madagascar flake)	$2.15	$10.88 (1919)	4 cents (present Feb. 25, 1921)	$8.36 (1918)	$18 (present)	$30-35 (crude), $50-$60 (talc)	$3 p[illegible]
Annual production in United States: Prewar	2,705 (short tons)	4,670 (1914)	1,479 (1914)	62,747 (1914)	213,551 (1913)	54,198 (1913)	591 long tons		115,580 short tons (1913)	5,000 tons	2,476,485 (1914)	31,191 (1914)	457,500 (average, 1910-1915)	3,380,928 (1914)	2,635	11,223	[illegible]
War time	24,377	6,323 (1918)	1,683 (1918)	155,368 (1918)	318,187 (1917)	207,408 (1917)	82,430	126,715 long tons	218,828 short tons (1917)	13,593 (1916)	2,696,226 (1917)	31,885 (1917)	567,300 (average, 1916-1918)	3,786,364 (1917)	305,869	231,605	[illegible]
Present (latest available data)	3,963 (estimated)	11,281 (1920)	1,500 (1920)	180,000 (1920)	269,831 (1920)	129,283 (1920)	3,900	88,498 long tons	286,000 short tons (1920)	167,879 (1917)	2,340,000 (1919)	39,000 (1919)	430,000 (yearly rate)	3,206,016 (1918)	58,243 (1919)	164,695	4[illegible]
States in which produced	Colorado, Arizona, New Mexico, California, Utah, Alaska, Idaho.	Nevada, Washington, Montana, Utah, Colorado, California.	Vermont, Arizona, New Mexico, California, Georgia, Maryland, Oregon.	Missouri, Georgia, Tennessee, Illinois, Maryland, Virginia, North and South Carolina (18 other States, making 26 in all).	Colorado, Utah, California, Idaho, Missouri, Kansas.	Colorado, Utah, California, Ohio, Illinois, Delaware.	California, Colorado, Oregon, Wyoming, Pennsylvania, Maryland, Alaska.	New York, Vermont, Georgia, Maine, North Carolina, California, Virginia, Pennsylvania, Connecticut, Maryland, New Jersey, New Hampshire.	Illinois, Tennessee, Kentucky, New Mexico, Colorado, Arizona, New Hampshire, Nevada, Utah, Washington.	Montana, Pennsylvania, Alabama, New York, Colorado, Texas, Georgia.	New York, Alaska, Iowa, California, Michigan, Nevada, Illinois, Oklahoma, Minnesota, Utah, Washington, Ohio, Wisconsin, New Mexico.	Georgia, California, Delaware, Texas, Missouri, Florida, North Carolina, South Carolina, Pennsylvania, Utah.	Missouri, Washington, Idaho, Oklahoma, Utah, Kansas, Colorado, Arkansas, Tennessee, Wisconsin, Montana, Illinois, California, Arizona, New Mexico.	Washington, Arizona, Pennsylvania, Kansas, Ohio, New Mexico, Colorado, West Virginia, Tennessee, Michigan, Montana, Massachusetts, California, and other.	Arkansas, Virginia, Montana, West Virginia, Colorado, Georgia, Minnesota, Tennessee, Nevada, California, New Mexico, Arizona, Vermont, Oregon, Utah, Texas.	Washington, California.	[illegible]
Number of people dependent on this industry for support.	1,100	1,500	100,000 (including manufactured).	22,000	Included in employees of smelting industries.	Included in employees of smelting industries.	2,500	7,500	8,500	4,500	8,000	10,000	300,000	16,000	7,500	3,000	15,00[illegible]
Approximate investment.	$10,000,000	$5,000,000	$25,000,000	$15,000,000	Included in investments in smelting industries.	Included in investments in smelting industries.	$1,500,000	$5,000,000	$16,000,000	$7,500,000	$17,000,000	$12,000,000	$400,000,000	$30,000,000	$15,000,000	$13,000,000	$32,0[illegible]
Present condition in this industry and particular problem it is facing.	Low Chinese and Mexican labor costs.	Operating but not extending, due to lower foreign costs, jeopardizing investment.	Protection of manufacturer necessary to develop ore deposits for this market; no tariff asked on raw asbestos.	Operating but not extending. Investment jeopardized by low German costs and unfair German competition.	This valuable metal contained in complex ores should be protected so its recovery is economically possible.	Cadmium recovery an intricate metallurgical process developed during war which should be fostered and continued.	Completely collapsed.	Large development, but primitive operations, due to instability of market.	Large development, but could be greatly increased if protected.	Only 2 mines in the United States in operation and each of these on part time.	Operations expanded greatly during the war; need protection to continue.	Business had large development recent years; protection will give opportunity to use better refining methods and develop industry.	40-50 per cent of properties closed down; practically all operations solely to keep organization together in hope of relief; low foreign wage and ocean freight.	Canadian competition offers special problem to border States industry to be corrected by tariff.	Operating about 5 per cent of capacity; possibilities under protection enormous.	Completely shut down due to foreign competition.	Oper[illegible]
Probable relative percentage of mineral that will be consumed under correct tariff: Foreign	40 per cent	25 per cent	Raw, 95 per cent; manufactured, 25 per cent.	20 per cent	25 per cent	20 per cent	60 per cent	20 per cent	10 per cent	45 per cent	10 per cent	50 per cent	20 per cent	One-fourth of 1 per cent	55 per cent	20 per cent	15 pe[illegible]
United States	60 per cent	75 per cent	Raw, 5 per cent; manufactured, 75 per cent.	80 per cent	75 per cent	80 per cent	40 per cent	80 per cent	90 per cent	55 per cent	90 per cent	50 per cent	80 per cent	99¾ per cent	45 per cent	80 per cent	85 pe[illegible]
Tariff requested to protect industry	10 cents per pound upon antimony salts and sulphuret; 10 cents per pound on antimony as regulus or metal or matte containing antimony or in antimonial lead; 8 cents per pound antimony content in antimonial ores.	5 cents per pound of As_2O_3 (white arsenic).	Paper: 5 cents per pound paper, millboard, and articles manufactured therefrom; 10 cents per pound paper and millboard manufactured from long-fiber asbestos and electrical papers not exceeding 0.0005 inch in thickness. Sheets: 1½ cents per square foot asbestos in plates with hydraulic cement not over ⅛ inch in thickness; 2½ cents per square foot over ⅛ inch but not over ¼ inch; 5 cents per square foot over ¼ inch but not over ½ inch; 6 cents per square foot corrugated or otherwise not flat; 50 per cent ad valorem in addition; all other progressive rates named in Watson bill (H. R. 15450).	¾ cent per pound barytes crude; 1½ cents per pound barytes ground; 1½ cents per pound barium sulphide; 2 cents per pound barium carbonate; 2 cents per pound barium binoxide; 2 cents per pound barium sulphate; 2½ cents per pound barium chloride; 2½ cents per pound barium lithopone; 5 cents per pound barium nitrate; 8 cents per pound barium peroxide; all other barium compounds, 25 per cent ad valorem.	25 cents per pound	25 cents per pound	Ore, 60 cents per unit Cr_2O_3; refractories, 85 cents per unit Cr_2O_3; ferrochrome, 11½ cents per pound chromite content; salts, 90 cents per unit chromite.	$2 per ton crude; $6 per ton ground or manufactured.	$6 per ton on grade of 80 per cent CaF_2 or better.	Ore under 50 per cent graphite content, 1 cent per pound; ore over 50 per cent graphite content, 2 cents per pound: lump and chip, 3 cents per pound; flake graphitic content, 6 cents per pound; manufactured graphite products graphitic content 5 cents per pound and 20 per cent ad valorem.	Crude gypsum 50 cents per ton; compensatory duties on advanced stages of manufactures.	$6 per ton	2 cents per pound on lead in ores, copper matte, etc.; 2½ cents per pound, dross bullion, pigs, bars, etc.; 2½ cents per pound, sheets, pipe, shot, glaziers, wire, etc.; 3 cents per pound, white lead pigments, etc.	Quicklime, bulk, 30 cents per 100 pounds; 50 cents per 100 pounds on quicklime in cooperage; hydrated, 40 cents per 100 pounds; pulverized, $1 per ton bulk; $1.50 sacked.	Ores, 40 cents per unit of manganese content; ferro, $1 per unit of manganese content.	Ore, ¼ cent per pound: calcined, ¾ cent per pound: brick, ¾ cent per pound.	Marb[illegible]
Tariff proposed in H. R. 7456: Schedule	3	1	14	1	Free list	Free list	Free list	2	2	2	2	2	3	2	3	1	2
Paragraph	376	1	1401	64	1523	1539	1544	207	207	211	205	207	388	204	302	47	233
Rate of duty	1½ cents per pound on antimony as regulus or metal.	25 per cent ad valorem on arsenic acid, arsenious acid or white arsenic	Paper, millboard made of long fiber, electrical papers, not exceeding 0.05 inch in thickness, 8 cents per pound; made of other fibers, 1½ cents per pound; sheets and plates, 1-3½ cents per square foot wick and rope, 18-56 cents per pound; yarn, 32 cents-$1.68 per pound; textile fabrics, 42 cents-$1.40 per pound; all other manufactures, 20 per cent ad valorem.	$4 per ton on crude barytes ore; $7.50 per ton ground or manufactured; 1 cent per pound precipitated barium sulphate.	Free	Free	Free	$1 per ton; clays or earths not specially provided for.	$5 per ton; *Provided*, That 1 year after the passage of this act duty on fluorspar shall be $4 per ton.	10 per cent ad valorem.	Crude, 25 cents per ton; ground or calcined, $1.40 per ton; white Portland cement, 8 cents per hundredweight; Keen's cement, $3.50-$14 per ton.	$2.50 per ton	Lead in ores and mattes, 1½ cents per pound; bullion, pigs, bars, scrap, etc., 2¼ cents per pound; sheets, pipe, shot, wire, etc., 2¾ cents per pound.	Limestone, 5 cents per hundredweight; lime, 10 cents per hundredweight; hydrated lime, 12 cents per hundredweight.	1 cent per pound on metallic manganese contained in ore; 2½ cents per pound on manganese contained in ferromanganese.	Crude or ground: ½ cent per pound. dead-burned or grained.	40 [illegible] re[illegible]

THE RARER METALS

By Frank L. Hess.*

THE MARKET for the rarer metals is not dead, but it is very somnolent. About the only signs of life are in the radium industry. Whether times are good or bad, disease, like hunger, comes upon us and must be treated, and so radium is needed always. But business in tungsten, chromium, molybdenum, titanium, nickel, cobalt, and vanadium, all of which depend mostly on the steel trade, has been so quiescent that the industry is making scarcely a sound other than that made by the discussion of tariffs. The long period of quietude in these metals has raised a question in some minds as to whether they will ever "come back," and it seems worth while to review the situation briefly.**

Tungsten

I have said before that the use of tungsten in tool steel is as staple as that of yeast in bread. But will it still be true when business again starts to hum? When the long, hot shavings again begin to twist and squirm from the high-powered metal lathes, will they be turned off by tungsten steel? It seems safe to answer positively, "Yes." During the Great War the price of tungsten reached, in at least a few transactions, more than $10.50 per pound for tungsten powder carrying about 98 percent of tungsten, and ores sold at the mine for as much as $93.50 per unit. Tungsten high-speed steel carried from 16 to 20 percent of tungsten, which generally represented an addition of 20 to 25 percent in the melt, for losses ran from 12½ percent to more than 20 percent, and yet with such a cold cash inducement to offer substitutes they generally made but a small showing. The one exception was "stellite," Elwood Hayne's fine alloy, the composition of which varies according to the purpose it is intended to serve but which in general has a base of about 25 percent chromium and 75 percent of cobalt, to which is added as much as or even more than 12 percent of tungsten or even more when it is to take the place of tool steel —so that even in stellite tungsten is essential, though in smaller quantity.

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Specialist on the Rarer Metals,
U. S. Geological Survey

Tungsten miners and users were somewhat dubiously interested in rumors from England that Prof. Arnold had invented a molybdenum steel that would replace tungsten steels and be better. There was the usual talk of mystery and government control, but when details were finally obtained the steel appeared to be very similar to others made in this country many years ago.

Tungsten will again be used as it was before the great slump in business. However, without regard to tariffs, it will be a considerable time before American mines can again begin producing tungsten ore profitably. Before the Great War the United States was in most years the largest producer of tungsten ores; Burma was second and surpassed us for a couple of years. In the Hermyingyi mine Burma claimed to have the largest tungsten producer, but the mine has not been even a close second to our own Atolia mine, producing less than half as much from 1910 to 1917, inclusive, as shown by the table on the next page.

As a matter of fact, both the Primos Chemical Co. and the Wolf Tongue Mining Co., in the Boulder ferberite field, Colo., produced more tungsten in the same years than the Hermyingyi. But the cheaply, easily mined ores are mostly gone from the known Burmese deposits, and whereas the operators once talked of ores that could be profitably produced at $2.25 per long-ton unit, they are now talking of $7 to $10 as the cost of production, and in the United States we find the cost generally estimated at twice as much. But as everyone concerned knows, the high prices of the Great War caused the discovery in China of the greatest and most cheaply worked tungsten field yet known. This field lies in eastern Kwangtung, southern Kiangsi, and southeastern Hunan and northern Kwangsi. So far nearly all the tungsten produced in this field except that from Hunan has apparently been derived from placers but beginning with 1918 the yearly output has been larger than the annual production of the world before the Great War. When prices were high the ore came on the market at high prices; when they dropped, the Chinese price went down, but ore has kept coming even while it is offered at $3.25 per unit for concentrate carrying 72 percent WO_3. Therein lies one difference between the Chinese and the American—the Chinese demands and if he can gets a good price and spends money freely, but if he can not get what he wants. then, unlike the American, he goes right ahead working and makes what he can, and so Chinese ore has been offered on the English market at 11s. per long-ton unit, or less $1.85 per short-ton unit, the lowest ever known.

The high prices also brought considerable quantities of tungsten ores from Bolivia, Argentina, Japan, and Korea, and the sudden signing of the armistice left large stocks on hand and in transit, other stocks ready for shipment in other countries, mines running that were loath to shut down, and both the ore already produced and that being mined largely found their way to this country even with rapidly sinking prices.

At the end of 1918, the year that saw the close of the war, there was probably stored in this country an equivalent of at least 6,000 short tons of tungsten concentrates carrying 60 percent WO_3. Great quantities of tungsten steel were remelted during the short spurt in business during 1919, and stocks, instead of dwindling, increased; they kept increasing during 1920, until now it is probable that there is the equivalent of 13,000 short tons of ore carrying 60 percent WO_3 in storage in warehouses of New

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**Since this article was written, even the radium mines are reported to have been closed.

A TIN PROSPECTOR'S CABIN

On Cape Mountain, Cape Prince of Wales, Alaska. The wind blows so fiercely that snow is packed against all objects in its way. Note the stake at the right

York and other places and steel at works.

The normal annual consumption of tungsten concentrates in this country is not much more than 3,000 short tons of 60 percent concentrates, and no new uses absorbing much tungsten during peace times have been developed, so that from present knowledge it is apparently plain that little market for new concentrates can be expected, with or without a tariff of any size, for four years after the high-speed tool steel industry wakes from its present stupor, and no one knows when that will be.

Comparison of the output of the Hermyingyi mine (Tavoy, Burma) with that of the Atolia mine (Atolia, Calif.)

Year	Hermyingyi mine (wolframite)		Atolia mine (scheelite)
	Concentrates (40% WO_3 and 30% Sn) (long tons).	Equivalent in concentrates 60% WO_3 (short tons).	Concentrates 60% WO_3
1910	0.9	1	405
1911	86.3	64	259
1912	177.8	133	395
1913	189.4	141	462
1914	432.12	323	420
1915	640.29	479	794
1916	775.41	579	1844
1917	1038.	775	1783
	3339.22	2495	6362

CHROMIUM

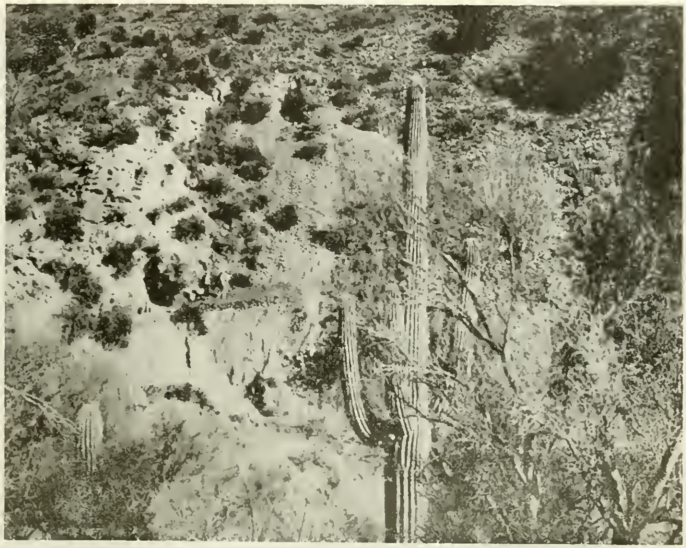
We are still so near to the Great War that we feel its influence in nearly all commercial enterprises, and chromium mining is no exception.

Before the Great War little thought was given to the idea of furnishing our entire supply of chromium ore from domestic deposits. The ores of New Caledonia, Rhodesia, Turkey, and Greece were too plentiful, of too high grade, and too cheap for successful competition. The use of chromium in tool steel, armorplate, stainless steel, and stellite, of chromite in refractory brick and for lining furnaces direct, and of chromates in tanning leather and in pigments had been increasing, but when the war caught us in its grip both use and price increased immensely. Shipping was at so great a premium that lower-grade ore was accepted and used at three times the price formerly paid for high-grade ore. The United States Geological Survey and the Bureau of Mines had representatives in the field helping to stimulate mining, and it went on at an increasing rate until the signing of the armistice. A large stock was left in the hands of producers, and most of it is still there. A considerable quantity was marketed in 1919, but it was probably nearly all newly mined ore.

RARE MINERALS IN THE DUNES

A lagoon behind the beach, at Pablo Beach, Florida. The dunes at the edge of high-tide level are seen in the background. In the beach are segregations of ilmenite, rutile and other heavy minerals. The dunes also carry the minerals

The high prices influenced the rich mines of other countries to produce ore quite as much as those in this country, and the foreign ore has kept on coming through our ports, for at no time have prices been below the pre-war standard under which foreign mines operated. The figures collected by Edward Sampson[1] show that these ores averaged in the foreign countries $9.56 per long ton in 1913, $8.77 in 1914, $10.20 in 1915, $13.35 in 1916, $15.41 in 1917, $28.29 in 1918, $22.50 in 1919, and $12.79 in 1920. Large users are thought to have considerable stocks on hand, and chromite has recently been a drug on the market, offerings of 50 percent ore at $20 per long ton finding no buyers.



A VANADINITE PROSPECT
At Dripping Springs, Arizona. Since this photograph was taken, hundreds of tons of ore have been mined

Unlike that for tungsten, the intensive pro pecting for chromite occasioned by war prices discovered a considerable number of large new deposits, probably the principal of which are those in Stillwater and Sweet Grass counties, Mont. However, like most if not all other chromite deposits, they have been formed either by differentiation or some related process from the peridotite and pyroxenite in which they are found, and although the outcrops are extensive,[2] the depth must be considered very uncertain until proved by mining or drilling. The deposits are 34 to 43 miles from a railroad, and a distance that is geographically rather short may be commercially very long. Thus in Bolivia I have seen mines where there was little difference in cost between eucalyptus timbers brought 75 miles and Oregon pine brought 6,000 miles. The Montana ores would have a long haul to market and probably can not be worked in competition with the rich ores that can be bought in New York for 50 cents per long-ton unit.

Cheap chromium may extend the uses of the metal considerably. It has been suggested that stainless steel might be used for casing in certain oil wells where the casing is badly attacked by electrolysis, and that it might be used in reinforcing seawalls and other concrete structures that are broken up by the rusting of steel.

MOLYBDENUM

Molybdenum is, like some social aspirants, not yet quite sure of its place. It has been backed with splendid faith and good hard dollars. There are many small mines and prospects over the country, and before the Great War numberless experiments had been made to use it in steel; Dr. Mathews, of the Crucible Steel Co., patented molybdenum steels in 1905.[3] The showiness of molybdenite in white quartz, the comparative ease of its metallurgy, and the marvelous things that have been accomplished with tungsten, vanadium, chromium, and manganese have made it an attractive subject of research. About the time the United States entered the war the Climax Molybdenum Co. and the Molybdenum Products Corporation started exploitation of a great deposit of which each owned a part, though the holdings of the former were much the larger. The Climax Molybdenum Co. spent a million dollars and erected a mill with a capacity of 1,000 tons of ore per day. The Molybdenum Products Corporation spent several hundred thousand dollars and built a 300-ton mill.

In England and France molybdenum was for a while used to replace tungsten at a time when tungsten was hard to get, consequently the price of molybdenum concentrates rose very high. Germany could get much less tungsten than formerly and was even more anxious than the Allies to get molybdenum. Norway, being in an advantageous position, could obtain a very large price for its molybdenite from Germany, and rather than proceed to rationing, as was later done with Sweden, the Allies took all the Norwegian molybdenite at $4 a pound. In this country airplane crankshafts and driving rods were made of molybdenum steel, and one great automobile company made plans to replace vanadium steel by molybdenum steel. The Government, shortly before the armistice, planned to make thin molybdenum steel armorplate, though actual manufacture was never begun.

Inklings of these uses became common rumor, and naturally it was felt that the day of molybdenum had come. But the war ended, the uses were largely discontinued, markets flattened, and now there is little sale at any price for molybdenum concentrates.

However, the Climax Molybdenum Co., the Crucible Steel Co., and others have carried on a remarkable series of experiments that seem to show real use for molybdenum in steel, a new automobile company is making an automobile with molybdenum steel, "Mo-*lyb*-denum" steel shovels are advertised, and it looks as if we

[1] Chromite in 1920: U. S. Geol. Survey Mineral Resources, 1920, pt 1, p. 25, 1921.

[2] Westgate, Lewis G., deposits of chromite in Stillwater and Sweet Grass counties, Mont.: U. S. Geol. Survey Bull. 725, 1921, pp. 67-84.

[3] Mathews, John Alexander, manufacture of tool-steel: U. S. patent 779,171, Jan. 3, 1905.

EIGHTY-YEAR OLD PROSPECTOR
And his molybdenum prospect, Emigrant Creek, east of Chico, Montana

EUREKA
Prospector has found carnotite ore, from which radium is extracted, in the La Sal Mountains, Utah

may again see a market for molybdenum, the metal to be used in fractions of a percent in spring and axle steels and in other steels, very much though not entirely as vanadium is now used.

VANADIUM

Vanadium is the great homeopathic remedy for steel. The history of vanadium production and smelting is romantic but can not be related in detail here. It had been known for a long while that steels and wrought iron made from vanadium-bearing ores were of unusually good quality, but vanadium deposits were scarce, and those known were small. The first large vanadium deposit found, that of Minaragra, Peru, is still the largest known, and for 10 years has supplied most of the vanadium used in the world. When the Flannerys and their friends undertook the exploitation of the Minaragra deposit they also had to carry on a considerable advertising campaign, and vanadium sold at about \$5 a pound for the vanadium contained in ferrovanadium. The metallurgy was very little understood, and at first a third less than half of the vanadium of the ore was obtained in the ferro. After the use of ferrovanadium had become fairly well established, the roscoelite deposits in southwestern Colorado were found, and their exploitation was begun by a New York firm which later sold its interest to the Primos Chemical Co. The Peruvian ores are very rich and as mined at that time carried about 45 percent V_2O_5, but the Colorado ores, although comparatively lean, are in a country that is comfortably habitable, and are close to the railroad. The Peruvian ores occur in bleak mountains at an elevation of about 15,500 feet, 26 miles by trail from a railroad, and until this year the ore had to be carried to the railroad on llamas. The Peruvian ore had the disadvantage also of being a sulphide and of containing other metals, such as nickel (said not to be now found in the ore) and molybdenum, so that its metallurgy was much more difficult than that of the pure roscoelite sandstone of the Southwest. Apparently the company thought that by dropping the price heavily competition could be stifled, and they accordingly reduced the price to about \$2 a pound. But costs in the Southwest were lower than had been supposed and competition remained and flourished. During the war prices again rose and reached a very high point, one company reporting that in 1918 and 1919 it sold vanadium at about \$8.50 a pound for the vanadium contained in the ferro. Since then prices have dropped until quotations of \$3.50 or less have been made.

About 60 percent of the world's vanadium has come from Minaragra during the years that the mine has been in operation. The vanadium produced in the United States has not all come from roscoelite, but the carnotite ores from which radium is obtained have furnished a considerable part of the supply, and have made a valuable by-product in the isolation of radium. Some of the ore too poor in radium to be profitable was mined during the high prices for vanadium, and from these two sources, the roscoelite-bearing sandstone and the radium ores, the United States has produced most of the 40 percent of the world's production not made from Minaragra ores. The vanadinites of the Southwest are very attractive and are at first glance tempting as vanadium ores, but they are so variable in composition and usually carry so many elements that are difficult to separate commercially from vanadium that small use of them has been made. Pure vanadinite is a lead chlor-vanadate, but during the formation of the mineral lack of vanadium may be in part made up by phosphorus or by arsenic, and the lead may be in part replaced by zinc and copper or both, so that very complex minerals result, and unless the ore can be obtained in very large quantities so as to allow mixing to a fairly constant smelter charge, the metallurgic processes must be changed so often that it does not ordinarily pay to smelt the ores. Most of the deposits so far found have been small, and all are confined to the oxidized zones of lead veins.

Radium and Uranium

The United States is by far the largest producer of radium and has the largest known reserves of radium-bearing minerals. However, the quantity produced, when compared with that of other minerals, even the most precious, such as gold, platinum, or diamonds, seems absurdly small, for in no other substance is so large a monetary value represented by so small a bulk.

In 1920 the United States produced ore carrying 43.4

WORLD'S LARGEST KNOWN MOLYBDENUM DEPOSIT
The Climax Molybdenum Mine, Climax, Colorado. This mine is situated at an altitude of 12,000 feet.

grams (about 1.5 ounces) of radium, and during the year the nine radium plants of the country isolated and placed in tubes 32.539 grams (1.15 ounces) worth about $3,253,900.

Since 1911, when the first uranium minerals were mined in this country for radium, ore carrying 186.5 grams (6.6 ounces) has been mined and shipped to reduction plants, and salts containing about 125 grams (4.4 ounces) of radium have been extracted in this country. Before the Great War some ore was shipped to Europe, and the radium was extracted in France, Germany, and Scotland. The quantity extracted abroad was probably not more than 10 grams, though this is a mere guess. The remainder of the 186.5 grams of radium was probably lost, for at first the quantity extracted in some plants was less than 50 percent of the radium in the ore. Probably 25 percent of the total output has been dissipated on watch faces, signs, etc., mostly during the war; some has been exported, and only 80 or 90 grams (3 ounces) has been placed in the hands of physicians and in hospitals. The pitchblende mines of Bohemia (Czechoslovakia), the importance of which has been greatly exaggerated in the public mind, had produced to the end of 1920 a total of 20.962 grams of radium (Ra). Europe probably almost exhausted its radium supplies by wasting uses similar to ours during the Great War.

Three states produce radium-bearing minerals in commercially valuable quantities—Colorado, Utah, and Wyoming—but Colorado produces nearly nine-tenths of the whole. Nearly all the Colorado ore carries carnotite (hydrous potassium uranium vanadate) as the uranium mineral, and it is mined in the southwestern part of the State, near the Utah line, between Gateway on the north and Cedar on the south. A little pitchblende (uranium oxide with some rare earths) has been mined near Central City. In Utah uvanite (hydrous uranium vanadate) is mined at Temple Rock, 45 miles southwest of Greenriver, and carnotite is mined near Thompsons and Moab. In Wyoming uranophane (a hydrous uranium silicate) is mined at Lusk. Efforts were made in 1920 to mine torbernite (hydrous copper-uranium phosphate) near Silver City, N. Mex., but the deposit was too lean to afford a profit. The mineral is now being used in a sanitarium at Silver City for the treatment of disease.

No large deposits of radium minerals are known outside of the United States. Some pitchblende has been mined in Austria, England, and Germany; autunite (hydrous calcium-uranium phosphate) and torbenite have been mined in Portugal, Madagascar, Tonkin, and South Australia; some tyuyamunite (hydrous calcium uranium vanadate) has been mined in Russian Turkestan; and a little carnotite and some obscure radium minerals have been mined in South Australia. Betafite, a complex mineral carrying tantalum, columbium, titanium, and about 18 percent UO_3, has been mined from decayed pegmatites in Madagascar as a radium ore, but only on a small scale. From the ore mined at all these deposits probably less than 40 grams (1.4 ounces) of radium has been isolated.

The whole stock of radium in the world today is probably not more than 100 grams (3.5 ounces). A hundred grams would be worth $10,000,000 to $12,000,000. An equal value in gold coin would weigh from 17 to 20 tons

The recognition of the value of radium in the treatment of certain forms of cancer, of lupus, of fibroid and some other tumors, cheloids, birthmarks, and other diseases is growing. In 1920 the State of New York bought for its Institute for the Treatment of Malignant Disease at Buffalo two grams of radium, and the City of Philadelphia has recently bought two grams.

That other large quantities may be purchased by other states and cities and thus make this marvelous substance available to all those suffering from the ailments for which it is beneficial, is devoutly to be wished. In spite of optimistic estimates by some, recent investigations seem to show that our probable supplies are so small that they should be carefully conserved and no radium should be used for illumination. It seems sure that radium should sell at a higher price than it has recently brought, probably not less than $120 per gram.

Titanium.

Titanium is another element which has attracted the attention of experimenters in the metallurgy of steel and other alloys for many years. It is found in this country in large quantity, both as the mineral rutile (TiO_2) and as the mineral ilmenite ($FeTiO_3$). The ilmenite is in most deposits mixed with magnetite or hematite, so that the percentage of titanium present is not very large. Titaniferous iron ore is found in great quantities in the Adirondacks and near Hartville, Wyo., and in smaller bodies at several points in the South. The largest rutile bodies known are those of Roseland, Nelson County, Va., where for 25 years rutile has been mined by the American Rutile Co. and its recent successor the Thermit Metal & Alloys Corporation. An unsuccessful attempt was made to obtain rutile from deposits on the Florida coast, where rutile and ilmenite have been concentrated naturally in sands derived from the gneisses of the southern Apalachains as these rocks have been gradually worn down by ages of weathering. Competition in the production of rutile has heretofore come from Kragero, Norway, but it seems possible that it may hereafter come from Madagascar also. A long dispute has taken place between rival manufacturers as to whether ferrotitanium containing carbon or carbon-free ferrotitanium is the better. Unfortunately neither alloy has obtained the prestige or the large consumption that its advocates had hoped. Titanium is used in the manufacture of both rolled steel and cast steel to rid the steel of absorbed gases, both oxygen and nitrogen.

During the war both the United States Government and the French Government used rutile to make titanium tetrachloride, a fuming mixture which when exposed to moist air forms dense white clouds of titanium hydroxide, setting free hydrochloric acid, so that if ammonia is added to the mixture the cloud is made more dense by ammonium chloride. These artificial clouds were used for hiding vessels and troops. Rutile is also used for making the electrodes for arc lamps, and potassium-titanium oxide and other salts are used for tanning and dyeing leather.

NICKEL

Of nickel the United States produces very little. Only one firm, the Missouri Cobalt Co., at Fredericktown, Mo., is making nickel from American ores, though a few hundred tons is saved annually as a by-product in the electrolytic refining of copper. Our principal supply has come from the great deposits of Sudbury, Canada, the most productive of which have been owned and operated by the International Nickel Co. Before the war this company had only one strong competitor, the Mond Nickel Co., but during the war the British American Nickel Co., in which the British Government held a large amount of stock, was organized. What its role will be in future competition can not now be foretold. A little nickel is also brought to the United States in the form of matte from New Caledonia.

COBALT

Cobalt, as a metal, has found extensive use only since the invention of high-speed steel and stellite. It had before that been used only a little in bug poisons, for coloring glass and pottery, and in chemicals. Most of the cobalt had been obtained as a by-product from the mining of nickel at Sudbury, and later as a by-product in silver mining at Cobalt and as a by-product of the electrolytic refining of the blister copper from Katanga, Africa, which carried as much as 4 percent of cobalt.

After the development of stellite the Haynes Stellite Co. took over deposits on Blackbird Creek, Idaho, about 16 miles southwest of Salmon. These deposits had been found years before by John Belile, who sent the mineral to the United States Geological Survey for determination, but after being told that it was cobalt, he had to wait for the invention of stellite before he could find a purchaser. The Missouri Cobalt Co. has also been producing cobalt in the form of oxide and hydroxide from the mixed sulphides at Fredericktown, Mo.

Several companies started to make high-speed steels containing cobalt, but being threatened with lawsuits by the German who owned a patent on such steels, they dropped its use. Cobalt steels apparently have so many advantages, however, that they will again be manufactured, and the use of stellite is growing so rapidly that a market for cobalt is apparently assured.

TIN

Tin, although not a rare metal in the general sense of the word, is of rare occurrence in the United States, being one of the very few metals with which we are not richly supplied. It has frequently been suggested of late, however, that if a sufficiently high tariff were placed upon it more and larger deposits would probably be found. To this view exception must be taken. This country has been so well prospected, cassiterite, the universal tin mineral, is so easily identified, and the mineral so readily forms placers because, like gold, it is heavy and does not alter on exposure, that it does not seem probable that any large deposits are yet to be found. The only productive deposits in the United States are the placers on Buck Creek, Alaska. A great deal of money has been spent on the lodes in the inhospitable mountain behind Cape Prince of Wales, and millions have been sunk in the deposits of the Black Hills and Temescal, Calif. Other vigorous attempts have been made to mine tin in Virginia and the Carolinas, and a few tons have been produced. All these fields have been prospected well enough to show that no great quantity of tin can be expected from them, and the United States must continue to obtain its supply from abroad.

HOW THE LEASING ACT IS ADMINISTERED

By H. Foster Bain
Director of the United States Bureau of Mines

AT THE DENVER MEETING of the American Mining Congress, Mr. Clay Tallman, then Commissioner of the General Land Office, presented a clear analysis of the mineral leasing act of February 25, 1920, with a comprehensive review of the conditions that led to its enactment. The new law has now been in operation more than a year and the Department of the Interior has developed a system for its administration designed to place the full resources of the department at the service of the government and the lessee who, in a sense, becomes the business partner of the government under the new law. The active part taken by the Mining Congress in shaping this legislation and the help given by its officers and members to the department in shaping the regulations, warrant a rather full statement of the scheme of administration that has been adopted.

The General Land Office retains full responsibility for all matters of title and legal interpretation and receives all moneys paid as royalties. The Geological Survey has important responsibilities to face in the classification of the land, the laying out of leasing blocks and takes the initiative in recommending rates of royalty. The Bureau of Mines maintains the field force which supervises the actual mining operations, to the end that the interest of the landowner, in this case the government, shall be maintained and the work conducted in a workmanlike manner with the minimum of waste. The First Assistant Secretary of the Interior, Mr. E. C. Finney, whose interest in the whole matter is keen and unflagging, acts as co-ordinator of these various activities and is in immediate charge of leasing matters under the Secretary.


DR. H. FOSTER BAIN

In addition to the Act of February 1920, leasing on the public lands is conducted under the terms of the potash law passed two years earlier, under a special act for Alaska, under compromise agreements in settlement of suits for trespass; and under provisions for leasing Indian lands, and Naval reserves. While the procedure differs under these various laws the general scheme is beginning to run through all and probably what is now being developed will become standard practice.

Up to July 1, 650 applications had been filed for coal prospecting permits, 113 for coal leases and 13 for coal licenses. At the same time 12 applications for oil shale leases had been received, 20 for phosphate lands, and 10 for sodium permits. The largest activity was in gas and oil where of 11,055 applications for prospecting permits received, 3,256 had been granted, 1,537 withdrawn or finally rejected, 3,762 rejected subject to appeal, and 2,500 remained to be acted upon.

The General Land Office has been handicapped on account of the lack of appropriations but an immense amount of work has been handled. Upon passage of the act, many applied immediately for prospecting permits and in some cases as many as 25 filed on the same tract of land. Such a number of applicants complicated and delayed the handling and granting of prospecting permits. Not much more than 1 percent of the applications were clear and complete. There were conflicts with state indemnity lands, power site withdrawals, rights of way, reclamation sites, forestry withdrawals, homesteads, railroad selections, desert land selections and privately owned land. As these matters are adjusted or otherwise removed the applications for oil or gas permits are referred to the Geological Survey to determine whether the land is outside a known producing oil or gas geologic structure. Upon certification to that effect by the Survey the General Land Office recommends to the Secretary of the Interior the granting of a prospecting permit.

When the operator discovers oil or gas, he must notify the General Land Office and apply for a lease, which, if there are no conflicts, is granted at a 5 percent royalty for one-fourth of the area in the permit, or if one-fourth of the permit is less than 160 acres, then the operator is given lease to 160 acres at 5 percent royalty. The operator also has a preferential right to lease the remaining three-fourths at a sliding scale royalty. Leases are also granted without previous prospecting where the Geological Survey certifies the land to be within a known producing oil and gas structure.

Many of the lease applications are so-called relief cases and in such the titles to the mining claims must be ascertained by examination of the abstracts that the status of the land may be determined and conflicts adjusted. The Geological Survey reports as to the character of the land. A special field agent must report as to the bona fides of mining claims, improvements made upon or for the benefit of such claims, amounts of back production, if any, and other similar questions. The procedure as to existing homesteads and other non-mineral entries, filings, or selections is set out on page 14 of General Land Office Circular 672 and cannot be condensed easily.

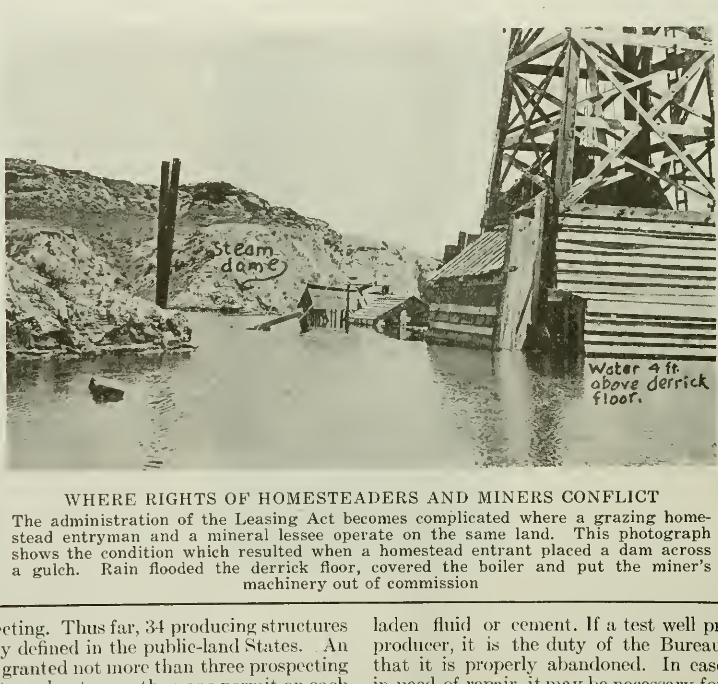
After all defects in the application have been corrected and conflicts removed or adjusted, and the applicant found to be qualified to receive a lease, the application is transmitted to the Secretary of the Interior, accompanied by a letter setting out all the salient facts of the case and accompanied by appropriate recommendations. If a lease is recommended and the recommendation is approved by the Secretary, the lease is drawn up in triplicate and sent to the lessee with instructions as to settlement of back royalty, interest, rental, dismissal of suits, distribution of escrow funds and impoundments by appropriate instructions to depositary banks, in the case of escrow deposits, and correspondence with the Department of Justice, in case of impoundments held by the courts receivers.

In compromise cases a report with recommendations is made to the President. If approved by the President, the case then follows the usual procedure. If the compromise case affects the naval petroleum reserves in any way the Secretary of the Interior collaborates with the

Navy Department before making his recommendation to the President.

Upon the completion of all settlements of amounts du to the United States and the return of the triplicate copies of lease duly executed by the lessee with proper bond, these are transmitted by the Commissioner of the General Land Office to the Secretary of the Interior with a report for execution of the lease by the Secretary. Upon return of the executed lease to the General Land Office, it is entered upon the records there and one copy sent to the lessee. The Bureau of Mines is also furnished with copies of all leases and in the case of oil, the Shipping Board (which buys the Government royalty oil) is advised, as well as the Registers and Receivers of the district in which the land is situated. The Navy Department and Mr. W. C. Mendenhall of the United States Geological Survey are notified if the land is in a naval petroleum reserve.

The Geological Survey must distinguish between prospecting territory and leasing territory on all the land covered in the Leasing Act, lay out leasing blocks and recommend the amount of royalty in the case of coal, the propriety of the issuance of a lease and reasonableness of the acreage in the case of phosphate, the proper type of right in case of sodium, and the propriety of issuing prospecting permit and later the sufficiency of the claim of discovery of potash. In the case of oil and gas, the act provides that territory in a "known geologic structure of producing areas" is subject for lease only. Outside lands may be covered by prospecting. Thus far, 34 producing structures have been officially defined in the public-land States. An applicant may be granted not more than three prospecting permits in one state and not more than one permit on each structure. The Survey reports on all applications, first, as to whether they are within or without a producing structure; and, second, if there are two or more applications filed by a single individual, as to whether they are on the same or separate structures. During the fiscal year of 1921, the Survey made about 7,000 reports under this part of the act.



WHERE RIGHTS OF HOMESTEADERS AND MINERS CONFLICT

The administration of the Leasing Act becomes complicated where a grazing homestead entryman and a mineral lessee operate on the same land. This photograph shows the condition which resulted when a homestead entrant placed a dam across a gulch. Rain flooded the derrick floor, covered the boiler and put the miner's machinery out of commission

Section 12 (c) of the regulations (Circular 672) requires that under certain circumstances the lands included in homestead entries shall be classified as to their prospective oil value in order that it may be determined whether the homesteader shall be limited to surface state or not. These classifications must be made by the Geological Survey.

The organization of the Bureau of Mines for administering the oil leasing act is largely in the oil fields throughout the United States. The Director of the Bureau is in responsible charge of the work, working through the chief petroleum technologist on technical matters, while the executive secretary handles routine matters. The chief oil and gas supervisor, who reports to the chief petroleum technologist, is in charge of the field work and has headquarters at Denver, Colorado. Local field offices with deputy supervisors in charge have been established at Casper, Wyoming; Winnett, Montana; Shreveport, Louisiana; and Bakersfield, California. The total personne of the oil and gas leaking work of the Bureau of Mines comprises about 26 employes and is composed of engineers, drillers, oil gagers and oil clerks. When the Secretary of the Interior grants a prospecting permit or lease the Bureau of Mines notifies the appropriate field office. In the case of a producing lease, the field men of the Bureau supervise drilling and production, gaging of oil and the metering of gas, and compute the royalty due the government.

The supervision of drilling, both on leases and on prospecting permits, requires careful watch of the progress in order to make certain that each well is drilled so as to prevent waste of oil or gas, whether it be through flooding of the productive sands by water, or through allowing the escape of oil or gas into barren sands. In the case of prospecting permits, if it is thought that any possible oil sands have been passed by without testing, the Bureau engineers must see that these are protected against damage by the use of casing, properly set either with mud-laden fluid or cement. If a test well proves to be a non-producer, it is the duty of the Bureau engineers to see that it is properly abandoned. In cases where a hole is in need of repair, it may be necessary for the Bureau force to direct the repair work on the well.

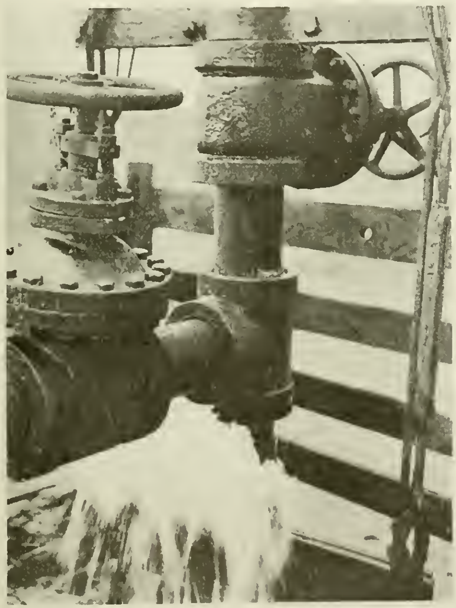
In California, the State Mining Bureau has an excellent organization of field engineers for the supervision of the drilling of wells. Here the government co-operates closely with the state organization and as far as the drilling of wells is concerned takes the position of a land holder rather than a supervisor. This avoids annoyance to the operators and duplication.

The oil produced on a lease is run to tanks where it is gaged before being run by the pipe line. The Bureau does not have a force large enough to gage every tank of oil, and the pipe line run tickets of the company are usually accepted, but the government gagers are present at a sufficient number of runs to check the general production on any particular lease and to see that there are no large errors in gaging. The production from any lease soon becomes constant enough for any large difference to be promptly noticed. Besides, the producing company usually sells to a pipe line company and often both have their own gagers on hand at the time the oil is gaged.

Each month a statement is sent to the field office of the deputy supervisor showing the amount of oil run from each lease, and from this statement computations are made as to the amount of royalty oil due the government and its value. In most cases the pipe line company runs the entire production from the lease.

Except for compromise leases, the usual royalty percentage for oil is on a graduated scale which becomes higher with an increase in the average production per well per day for the month, also with an increase in the Baumé gravity. The Bureau has prepared a set of royalty computation tables which operators can use in computing royalty due the government.

The royalties from natural gas may be from two sources, (a) revenue from the sale of dry natural gas, and (b) revenue from the sale of casinghead gasoline manufactured from the natural gas. If the average production per well is over 3,000,000 cubic feet of gas per day for the month, the royalty is one-sixth of the value, while if under that figure the royalty is one-eighth. Where the operator



A WYOMING GAS WELL

Showing the escape of water between casing and tubing. Water may do great damage to the oil or gas sands, and it is the duty of Bureau of Mines engineers to see that wells in this condition are repaired

manufactures casinghead gasoline from the natural gas, the operator is allowed two-thirds of his total receipts for plant operation and a royalty of sixteen and two-thirds percent is taken upon the remaining one-third. In the Rocky Mountains transportation is difficult, and the winters are severe, so the Department allows the plant operators a higher fraction for plant operations.

The oil and gas companies pay their royalty money to the receiver of the local land office of the district in which the land is located. The local receiver turns this money into the U. S. Treasury and sends in a statement to the General Land Office at Washington, D. C., of the amount received from the various companies. The General Land Office audits each account and determines whether each lessee has paid the proper amount according to the statement issued by the Bureau of Mines.

Under an executive order of May 31, 1921, the President committed the administration and conservation of the Naval Petroleum Reserve to the Secretary of the Interior. It is estimated that Naval Petroleum Reserve No. 2 in California produces 8800 barrels of oil per day at present, which must be gaged in order to determine the royalty oil due the United States. Leases have been granted recently to the United Midway Oil Company and the Pan American Petroleum Company which require drilling 22 additional wells on Naval Petroleum Reserve No. 1. It is probable that within the next year there will be a pr o duction of 30,000 barrels per day inside the Naval Petroleum reserves in California. The government reserves the right to take its royalty in kind, and as a result the Navy Department will probably arrange with certain companies to exchange the royalty oil from the naval reserves for an equivalent value of fuel oil at the sea coast.

At the present time the Shipping Board has an agreement with the Department of the Interior whereby it buys from the government the royalty oil produced on government lands in Montana and Wyoming. The Shipping Board does not actually take the crude oil produced in the field but has arranged with the Midwest Refining Company to deliver to the Shipping Board on the Pacific Coast, a fuel oil of equivalent value. This is done by means of an agreement between the Midwest Refining Company and the Standard Oil Company of California at the Pacific Coast. Where the royalty oil is sold to the Shipping Board, the Department of the Interior bills the Shipping Board for the royalty oil and the Shipping Board pays this to the Department of the Interior, the money being handled in the same way as the royalty money is handled.

In a work of this magnitude many unexpected and difficult problems arise. For example, what is the value of natural gas at the well in a field with a very limited market and practically no competition, such as in the Poison Spider field, in Wyoming? In considering such a question the Department must exercise considerable discretion in order to be just both to the companies and the government. What also is the value of the casinghead gasoline in an isolated district? In the Salt Creek field, Wyoming, the Midwest Refining Company enjoys a practical monopoly. The gas department of this company manufactures and sells its casinghead gasoline to the refining department. In California and Oklahoma, where there is considerable competition, the actual sales price which the operator receives for his casinghead gasoline is an index of a fair value but in Salt Creek field it was necessary to determine the value in some other way. This problem was complicated because of the isolation of the Midwest Refining plant. The plant may be shut off from transportation during the severe winter months. The field is 45 miles from a railroad and it was necessary to build a special pipe line to the railroad for transportation of the casinghead gasoline to the market and transportation costs are high. A problem of this sort involves considering the costs of the original investment, maintenance, depreciation of the plant, as well as net returns. It is not fair to compare conditions existing at Salt Creek with those in California or Oklahoma where the plants are near the railroad, and where there is a great deal of competition and a ready market. I may add that in this case it was decided to accept a certain percentage of the Chicago tank wagon price for gasoline.

The administration of the leasing act is complicated in some areas where there is a grazing homestead entryman as well as a mineral lessee on the same land. In one particular case the operator placed his derrick in the bottom of a gulch. Later the homestead entryman built a dam across the bottom of the gulch for the purpose of collecting water. Following a rain the water flooded the derrick floor and covered the boiler. Drilling stopped and the rights of the homestead entryman and the oil lessee are still undecided. The surface entryman and the mineral lessee may have troubles over fences and in many minor particulars the Department is called upon to preserve the equities as between various parties.

Operators have in general been keen to follow the regulations but in a few instances have placed derricks less than 200 feet from the section or boundary line, which is against the law. In one place an operator started to drill a well more than 50 feet within the 200 feet limit and after drilling several hundred feet he was instructed to move his derrick and abandon the hole. The Department wishes to be lenient with operators up to the point where the action of the operator breaks the law or where the operations result in unnecessary waste. The general attitude of the Department is that the companies are copartners with the government in developing these large natural resources.

The General Land Office has issued Circular No. 672 entitled "Regulations Concerning Oil and Gas Permits and Leases and Rights of Way for Oil and Gas Pipe Lines" which describes in general the different sections of the act and regulations for the administration of that part of the act relating to oil and gas. Copies of this circular may be had upon application to the Commissioner of the General Land Office, Washington, D. C. Thus far, the Bureau of Mines has issued three pamphlets in connection with the oil leasing act. These are (1) "Operating Regulations to Govern the Production of Oil and Gas" (2) "Plan for Conducting Work Under Operating Regulations to Govern the Production of Oil and Gas," and (3) "Tables for Computing Oil Royalties under the Leasing Act of February 25, 1920," copies of which may be procured upon application to the local field offices of the Bureau of Mines or upon application to the Director of the Bureau of Mines, Washington, D. C. By a study of the General Land Office circular and the information furnished in the three Bureau of Mines publications, the operator may gain considerable information as to the method of making application for prospecting permits and leases and of conducting work after securing a permit or lease.

The operations in the oil and gas fields have been described at length since at present they mark the major activity under the leasing act. The act, however, covers several other minerals and the other leasing laws throw upon the Department responsibilities of a wide range. It is probable that the coal fields will be more important than the oil fields and careful preparation is being made for caring for this work as it develops. The course of applications for permits and leases on coal lands through the General Land Office is the same as those for oil and gas and the possible conflicts and difficulties are the same. The coal sections of the act provide that prospecting permits may be issued where exploratory work is necessary to determine the existence or workability of coal deposits and that leases will be issued in other cases. The Survey reports on each application as to whether lease or permit should be issued. If the land is to be leased the law requires that leasing tracts be created either upon the Secretary's initiative or upon that of the applicant. The Survey is required to recommend to the Department appropriate leasing blocks or tracts. A proper royalty must be fixed in each lease issued. A minimum investment to insure operation by the lessee must also be established, and a minimum royalty, determined by a minimum tonnage to be mined each year, must also be specified. The Survey is required to advise the Department as to all these elements since in order to avoid misunderstandings with lessees it is desired that they be determined in advance. After the leases are issued the duty of supervising operations falls upon the Bureau of Mines, and, therefore, the engineers of the latter co-operate with the geologists of the Survey in making the determinations indicated. About 350 reports have been issued during the last fiscal year under the coal sections of the law and field studies, conducted jointly by the Bureau and the Survey to determine doubtful points, are now under way in the more important coal fields. Before issuing many leases in any field it is necessary to mark out virtually all the blocks that will be granted in order to divide as fairly as may be possible the natural facilities for mining and insure equality of access. These and many other problems come up in making the attempt to establish conditions which will permit mining on the government land with the maximum of economy and minimum of waste of coal.

The government is interested in low costs as these induce maximum tonnage, consequently greater royalties. The government is also interested in seeing that small or large tracts are not isolated by surrounding them with leased and patented lands, or by cutting off the logical points for economical development or transportation. The leaving of small tracts on outcrops is desirable when on transportation lines in order to supply the demands of small operators with little capital, but such small outcrop tracts should be included in leases when at distances from possible transportation lines. Where adjacent mines could each advantageously mine the coal in a connecting territory, the land must be divided into two or more blocks so that either party could by competitive bidding, bid in only that part or parts which are of economical importance to his respective mines without the necessity of injuring his neighbor. The lessee should not be permitted to acquire an undue amount of outcrop or cheaper mined coal, nor should be permitted to isolate coals under greater cover or to make the initial cost of developing them prohibitive. Applicants for land usually ask for such lands as have not already been applied for without reference to economical units. It would be much better for each to apply for the land desired, irrespective of the applications of others. In these cases it may be advisable to discard the lines drawn by applicants and to set up logical units and permit the interested parties to amend their applications to include one or more adjacent blocks providing the maximum acreage is not exceeded.

Some applications show a stock selling campaign to be in view. Others ask for maximum acreage where the markets are very limited, thus exposing the operator to the liability of having to pay minimum royalties greater than the maximum production. Other applicants plan to secure lands with maximum timber, to control waterways or outcrops on both sides of a canyon. On one occasion an application covered both sides of a canyon along one side of which the land asked for did not exceed 800 feet from the outcrop and extended more than a mile along it. Many of the applicants, however, show selection of lands to have been made by mining men and their engineers with the one view of economical mining and maintaining their reserve. The Bureau of Mines enforces the Coal Leasing Act after the leases have been granted. There are now two operators producing under government leases, both in Wyoming. Several leases have been paid for, and within a short time should become operative. Many of the operators adjacent to government lands have made applications for coal lands. The leasing of coal lands will shortly be an important government function and the leases a welcomed source of revenue.

In making recommendations for improving mining methods or safety conditions the most important factor is going to be the attitude taken by the miners themselves as to changing working conditions. Practices considered safe and economical in coal beds with less than 500 feet of cover are neither safe nor economical under a cover of 2,000 feet and radical changes must be made as the dust becomes drier and gas appears. Under these conditions use and kind of explosives must be modified as well as ventilation and lighting methods. The changes will be rather ones of proportion. In order to conserve the more economically mined coals, methods must be adopted which will increase the production per acre.

The government is now in the same position as a holding company with a large number of lessees and in order that the work may be conducted intelligently over a long period of years through many changes in market conditions and mining conditions it is necessary to obtain and keep most complete records. Complete working data is also of importance and it is hoped that the lessees will enter into the spirit of the plans and record accurately all conditions. Inspection will be made at frequent intervals to maintain safe practices and obtain the maximum recovery. The production of coal will be checked and as conditions warrant the mines may be surveyed.

The headquarters of the Bureau of Mines inspection force for coal and minor minerals has been placed at Denver, with reports passing through the office of the chief mining engineer at Washington. As need arises mining engineers in the several districts employed on other activities are detailed for the inspection work. Operating regulations covering coal mining have been published under the title, "Operating Regulations to Govern Coal Mining Methods and the Safety and Welfare of Miners on Leased Lands on the Public Domain under Act of February 25, 1920 (Public No. 146)." Copies may be obtained through the Director, U. S. Bureau of Mines, Washington, D. C. While they may seem voluminous at first glance it was thought better to plan definitely for the conditions to be met in advance of signing each lease and to leave no unnecessary discretionary authority in the hands of field subordinates as a possible source of friction. Coal mine inspection has been conducted many years in America and there is a basis of experience in regard to it that does not obtain in the case of the other minerals covered by the leasing laws. The Department regulations are simpler and less drastic than those of several of the states and it is recognized at all points that the state inspection laws take precedence.

Regulations covering mining for phosphate, oil shale, sodium and potash have been drafted and are in process of being circulated for criticism prior to being placed in final form. Mining of these minerals on the public land is as yet unimportant and since most of the desirable oil shale lands were acquired under the placer law prior to passage of the leasing act, the number of mines of oil shale to be considered is not likely to be large.

The magnitude of the operations now conducted may be illustrated by figures of the production of oil and gas. Up to and including June 30, 1921, $9,703,438.99 had been collected for royalties and bonuses and paid into the Treasury of the United States. A considerable amount of royalty from back production remains to be collected. During the year 1921 probably 12,000,000 barrels of oil will be produced from the wells on Government land and about 2,000,000 barrels of this will be due the Government as royalty oil. Up to July 1, 1921, 11,055 applications had been received for prospecting permits and of these all but 2,500 have been acted upon.

The act provides that 10 percent of the royalty received is retained in the Treasury of the United States. All money for royalty oil produced in the naval petroleum reserves is credited to miscellaneous receipts in the Treasury. Up to and including June 30, 1921, this amounted to $3,117,963.05. The balance of the $9,703,438.99 collected or $6,585,475.94 is to be apportioned as follows: The reclamation fund receives 70 percent of the past royalty money collected and 52½ percent of the future royalty collected. The various states in which the oil is produced receive 20 percent of the past royalty and 37½ percent of the future royalty. This money is to be expended by the states for public roads and schools. By the term "past royalty" is meant the royalty money due for production prior to the date of granting the lease and "future royalty" indicates the money due for production after the date of granting the lease.

Large sums of money are being turned over to the various states and it is apparent that the government has the responsibility of not only protecting its own interest but in addition that of providing for the states' interests. The Department of the Interior must be vigilant in providing for the proper development and conservation of the mineral resources effected for the purpose of obtaining a maximum revenue both present and future for the different states. Upon the fidelity with which this trust is fulfilled will depend in an increasing degree the amount of money available for roads, schools, and the making of homes in the West. Conscious of this responsibility, the officers of the Department and the Bureaus immediately concerned are making every effort to establish a simple and effective system of administration with the minimum of cost and interference. The keynote of the service is that the Department is now an active partner in development of the West.

J. F. CALLBREATH,
Secretary, The American Mining Congress

The American Mining Congress

was organized in 1898. From a purely "gold mining congress" it has grown to represent the whole mining industry, and today is the "Mining Industry Chamber of Commerce."

Its first great effort resulted in the creation of the United States Bureau of Mines. Through that Bureau thousands of lives have been saved through safety work, and the adoption of the slogan "Safety-First" has become nation-wide.

The provision in the revenue law which permits the deduction of the full value of the ore in the ground, rather than the 5 per cent limit provided in the law of 1913, is the result of determined effort and diligence on the part of this organization.

There are 27 minerals seeking a protective tariff. They are presenting their needs to Congress through the non-partisan channels of a well-balanced organization, which is making available for members of Congress well authenticated data upon which to base the protection sought.

The American Mining Congress has eight well equipped divisions: (1) The Division of Mineral Tariffs, which will furnish you with complete data concerning any of the twenty-seven minerals it represents. (2) The Tax Division, which may be consulted upon the many and intricate problems confronting the taxpayer. (3) The Bureau of Mining Economics, which is equipped to furnish you with reliable data upon any phase of mining. (4) The Legal Division, which will assist in preparing briefs to be presented to Government departments, and inform you of the status of legislation, pending and passed, the application of laws, and such legal matters as come within our province. (5) The Standardization Division, which is making a study of standardization, both national and international, and whose great effort is simplifying mining methods, practice and equipment. (6) The Daily Information Service, which keeps mining men informed of all mining news emanating from the national capital, whether legislative or departmental. (7) The Division of Precious and Rare Metals, which has made a special study of gold mining conditions, and which will assist in every possible way in the development of these industries. (8) The Mining Congress Journal, the monthly publication which carries a complete resume of national legislation, and 50,000 words of the livest mining news published.

Its presidents all have been leaders in the mining world: Hon. J. H. Richards, Dr. E. R. Buckley, John Dern, Samuel A. Taylor, David W. Brunton, Carl Scholz, Walter Douglas, Bulkeley Wells, W. J. Loring.

It is pledged to "At all times seek the best welfare of the mining industry, and to exert every legitimate effort to secure for that industry the recognition to which it is entitled" as the one indispensable industry.

ANNUAL REPORT OF THE COAL EXPORT COMMITTEE

New York, Sept. 1, 1921.

THE EARLIER ATTEMPTS made in 1920 to organize a Coal Export Association having been tabled on account of the rapidly varying foreign market conditions and the erratic fluctuations in shipping rates and foreign exchange, which caused many of the large operating companies to keep their personal representatives abroad, the work of the Coal Export Committee during the past year has been devoted to obtaining the most complete possible information which could be of interest to the coal branch of the mining industry, and placing the same promptly before the trade.

In this way, the chairman's desk has gradually become a sort of clearing house for export coal information over which pass the reports of the various foreign trade commissioners in response to the American Mining Congress' questionnaire previously sent out.

Shipping rates, embargoes, foreign port labor conditions, credit conditions, reports on new equipment installations for discharge, etc., in simila· manner are made available, and are frequently summarized in the "Journal."

The committee has thus met a demand for authoritative information and has placed on record for the use of the coal industry certain data never before obtained in this country. The continuation of this work it is believed is highly essential.

As a result of the information so obtained, and of private correspondence, and conferences with prominent coal operators and engineers who have recently returned from Europe and South America, it now appears that an export organization such as was proposed in 1920, is needed badly. Mr. Chas. A. Owen, president of the Tidewater Coal Exchange, Inc., and of the Imperial Coal Corporation, says that a strong organization of American coal exporters, working in close co-operation with the government and the shipping industry is the only way for us to handle the exportation of American coal, and such an organization must have the active, practical co-operation of sound financial institutions.

DR. HENRY MACE PAYNE
Chairman of Coal Export Committee, American Mining Congress

Such an organization already exists in England, and the English have studied the needs of the individual consumer (as was related in the report of this Committee on "Coal Conditions in Sweden," MINING CONGRESS JOURNAL, July, 1921).

It would appear that by delivering high grade American coal at French Atlantic ports at approximately \$8.50 per gross ton, we may expect a fair share of the normal French trade. This, according to Mr. Owen, would require ocean transportation at not exceeding \$4.00 and railroad freight to tidewater \$2.25, leaving only \$2.25 to cover cost of coal, insurance, banking charges, demurrage, etc.

To this there is only one answer: Reduced wages at the mines. German coal is being delivered to France at \$7.00,–\$8.00 per ton, in ample quantities. The difference in price allowed for American coal is the tribute to superior quality. The best English lump coal is being laid down in France at the present time for \$11.00.

The South American situation is such that nothing but concerted and co-operative selling can accomplish anything. Freight rates are the lowest in years, and credits of 60 days after arrival are demanded. Brazilian and Argentine credits were formerly in demand but in recent months many quibbles have arisen over technicalities in contracts. The Chilean market demands unreasonable guarantees of analysis and size, which have so far precluded the closing of any large business.

In view of the ultimate abandonment of a miner's subsidy by the British government, it is not unlikely that a sufficient rise in the cost of British coal will take place to create a favorable market for American coal. To meet this condition, early action should be taken toward the formation of an American Export Coal Association.

Such an association should work in close touch with Secretary Hoover of the Department of Commerce, and with the Bureau of Foreign and Domestic Commerce, and should endeavor to secure a uniform method of inspection, sampling, analysis, and guarantee of quality, similar to the grain inspection system now in force.

It is recommended therefore that the energies of this committee be directed during the coming year toward the continuance of the "clearing house of information" idea, the creation of an export coal organization, and a system of uniform inspection, sampling and certification as to quality, which will enable American coal exporters to intelligently meet the competition of other countries, establish uniform conditions of credits, and provide for the distribution to its members of all available commercial information to the end that there may be no cut-throat competition on international business.

HENRY M. PAYNE, *Chairman,*
JOHN CALLAHAN,
E. A. HOLLBROOK, *Vice* G. S. RICE,
GEO. A. O'REILLY,
CHAS. S. ALLEN.

THE TARIFF FIGHT

By Herbert Wilson Smith,
Chief of the Tariff Division, American Mining Congress

A WISE and weatherbeaten old half-breed guide with whom I climbed the lonely peaks of the Sierra Ladron in New Mexico taught me in the mountains a method of overcoming weariness which is not to be forgotten. After a hard climb of a hundred yards he would make me turn about and look over the valley and lowlands from which we had come. As we would stand looking back across those purple canyons renewed strength would gradually rise until it swept over me in a flood. It was partly the rest, partly the beauty of the vista, but mainly the sight of the progress we had made that refreshed us and stimulated us to climb further.

In the campaign for adequate protective tariff on the products of our mineral industry we can do the same thing. Three years ago the work of the Tariff Division of this organization was just beginning, and many of the minerals whose cause for protection was being espoused had never been considered as articles to which principle of protective tariff should properly apply. Today in this brief respite, given by the congressional recess and the consideration of tax measures in advance of the tariff measures by the Senate Committee, we can stop and look back over the road by which we have come. We are a long way from the top; we are a long way from the permanent establishment of protective tariff on many of these mineral industries. But H. R. 7456, known as the Fordney Tariff Bill, has passed the House and is now before the Senate Finance Committee. It contains features of protection for mineral industries which are most encouraging to those new industries which developed during the war and is the most noteworthy recognition of the protective tariff principles for mineral industries advocated by the American Mining Congress which has ever been passed by any legislative body. In working for a protective tariff on any of these mineral industries we have had to raise the entire economic structure above it; we have had to contend against the weight of every industry which is super-imposed above us in the use of the mineral or metal, the finished product of the miner, as raw material in their own manufactured finished product. We are bound to have the opposition of every one of these industries bearing down upon us, so the achievement of any form of protection is no mean task.


HERBERT WILSON SMITH

For almost two years the ground work was being laid in the development of the basis of information on which the tariffs were to be requested. In January of this year solid phalanxes of business men began to descend upon the Ways and Means Committee of the House; some of them in favor o our issues more opposed to them. Most of them represented the industries which used the materials produced in the mining industry in their own manufacturing process, but the mining industry kept on fighting through the splendid work of its individual members and representatives of the various separate mineral industries. At the conclusion of the hearings of the House Committee a statement in the form of a statistical chart was filed by the Tariff Division of the American Mining Congress with the Ways and Means Committee, giving the following data on all the mineral industries seeking tariff protection.

Present tariff classification; Schedule, Paragraph, Rate. Unit of measure; Imports from foreign countries: Prewar, War time, Present (latest available data); countries imported from; Labor cost per diem respectively in those countries; Relative trade balance of those countries with the United States; Present exchange rates of those countries with the United States; Nature and extent of ore deposits: Foreign, United States; Cost of production: Foreign, United States; Prevailing prices: Prewar, War time, Present (latest available data); Annual production in United States: Prewar War time, Present (latest available data); States in which produced; Number of people dependent on this industry for support; Approximate investment; Present condition in this industry and particular problem it is facing; Probable relative percentage of mineral that will be consumed under correct tariff: Foreign, United States; Tariff requested to protect industry; Tariff proposed in H. R. 7456: Schedule, Paragraph, Rate of duty.

This digest gives information on Antimony, Arsenic, Asbestos, Barytes, Bismuth, Cadmium, Chromite, Feldspar Fluorspar, Graphite, Gypsum, Kaolin (white china Clay), Lead, Lime, Manganese, Magnesite, Marble, Mica, Molybdenum, Monazite and thorium, Pyrites, Pumice, Potash, Quicksilver, Talc, Tungsten, Zinc.

The committee made extended use of this chart. The valuable feature which developed was, however, that the committee received the presentations and statements of our tariff division not as selfish requests designed to benefit a special industry, but in their correct aspect, as a presentation of fundamental facts on which the committee was to base its own conclusions.

There were also presented to the committee two charts which showed relative movements of price and production in two groups of mineral industries, protected and unprotected, and prices of finished products from these raw materials, over a period of twelve years.

It was shown that as prices fell, production fell with them until at the low point of the price there was a flat level of non-production, Following low production price starts upward. Production is stimulated thereby until at the high point of price, there is great over-production. Price then starts rapidly down; production follows it until the low point of price is again reached, which means bankruptcy for many operating companies, and a flat level of non-production which accelerates another upward price move.

Under such circumstances the swing of prices is rapid and over a wide area, and the price fixed by the manufacturer who uses these raw materials is based on the top price range, for he must be prepared in the price of his finished product to meet a cost for his raw material represented by the possible high ranges of price.

For example, look at the low prices to which minerals and metals dropped in late 1918 and in 1919; yet the prices of finished goods to the consumer went steadily up and reached their peak early in 1920 when the raw materials that went into many finished products had been bought on the low market of 1919.

Movements in the chart of protected mineral industries follow the same laws of supply and demand but with this vital difference; the industry being protected from extreme low ranges of price by tariff, price does not drop to a point below cost of production. Therefore, production does not fall to the flat level of non-production.

Similarly, as there is no flat level of non-production, there is no rapid stimulation of price The important thing to the consumer is that the cost of the raw material on which the manufacturer bases the cost of his finished product is at a much lower top range of probable price than is possible under the unprotected industries. Tariff, in short, has acted as a huge economic gyroscope in maintaining a smooth running-level in the price and production movement in the industry so protected.

These charts were shown in the March, 1921, number of The Mining Congress Journal and have been extensively featured in other publications.

The point which they emphasized with the committee is that the consumer does not benefit by the low cost of raw material in rapid fluctuations of price. That the committee was impressed by the truth of this view is shown in a speech later made by Representative Charles Timberlake, of Colorado, in which he says in part:

"Now, the point of these statements is this, where there is a wide range of fluctuation of price of basic raw material in an industry not protected by a tariff there is a much higher actual price cost to the consumer over a period of years on his finished product than there is in the industry which is protected by tariff and which can figure on its raw material at a level price over a period of years and can make its manufacturing cost and its prices to the consumer over a long period of time.

"Under such wild ranges of price fluctuation we have today free wool and high-priced clothing. We have free lumber and high building costs. We have free importation of agricultural products and high-priced foodstuffs. It was not the purpose of our committee in the framing of this legislation to take any stock in the principles of such industries as appeared before it when those industries would support protection for themselves and every step above them on our economic ladder and want to refuse protection to every industry below them, industries on which they were dependent for the materials which went into their manufactured products, industries which wanted everything they bought on the free list and everything that they sold protected, industries which wanted free ores and protected finished metals, which wanted free manganese ore and protected ferromanganese, free tungsten and protected alloy steel, because we knew that this meant ruin to the mining industries on which these very manufacturing industries were dependent. It meant loss of billions in revenue to the United States, and we knew that over a period of years it meant actually a higher cost to the consumer of every article into which a pound of this metal went because of the extreme price fluctuation which I have just cited."

We have had to controvert the theory that the economic structure of this country is a series of steps, one above the other, with some particular material as the beginning point. We have had to show that the raw material of one industry was the finished product of the previous stage and that our industrial structure is a cycle, not a ladder; that the miner of manganese ore, for example, produces from the raw earth his finished product which goes to the furnace, where it is their raw material from which ferromanganese is made, which in turn is the raw material of manganese steel from which mine machinery and steam shovel buckets are made, which in themselves are used in the reduction of the raw material by the miner to produce his finished product. Chairman Fordney of the Ways and Means Committee in support of this view stated in a recent committee hearing: "You talk about raw material. I will tell you what raw material is, in my opinion—I do not know whether you will agree with me: It is the round world untouched by man. Ore in the ground is raw material. Timber that stands in the woods is raw material. Hide on the back of an animal is the raw material of the tanner, but the finished product of the farmer. The man who wants protection on leather and free trade on hides is not my kind of a protectionist. Leather is the raw material of the shoemaker, but the finished product of the tanner. Cotton is the finished product of the farmer and the raw material of the manufacturer, and so on; you can go all along that line. "Every industry that comes in competition with the cheap oriental and European labor must be protected in order to maintain the standard of life and living in this country."

The bill which has passed the House is, on the whole, greatly encouraging to the mining industry. The issues which have been satisfactorily settled by this bill must be sustained before the Senate Committee. There are revisions to be made in the proposed rates, different rates which are obviously necessary to adjust differences between interrelated industries, protective rates for industries not established in the House to be considered, and we hope, granted by the Senate. These schedules must then be carried through their fight on the floor of the Senate, and through the compromises of the conference committee to ultimately become tariff law.

The tariff commission must complete its exhaustive report on the proposed system of American Valuation before the bill can be completely drafted.

Should the bill not be passed prior to adjournment it will not affect the status From whatever point in its passage it may have reached prior to adjournment, the measure will be continued as in one continuous session of Congress. It is probable therefore, that the measure will be enacted into law during 1921.

The mining industry asks of Congress not preferential consideration, not special privilege, but we ask that in the building of an economic platform on which the industries of our nation are to stand for many years to come, that no gaps be left through which any worthy industry may be dropped to bankruptcy and extinction. We ask that, when the product of any mineral industry is essential to economic structure, and when our known supply of this mineral is sufficient to justify hope of adequate production through development, a sufficient measure of protection be given to these industries that they may endure, and that they may employ American workmen at American scales of wages in the development of worthy American industries, these industries which have always been the bone and sinew of our nation, the American mining industries.

All this means work, real work, but work that we can approach confidently and vigorously in view of the progress we have made.

We can gain from looking back over the long road we have come ample encouragement to finish the journey.

TAXATION PROBLEMS OF THE MINING INDUSTRY

By McK. W. Kriegh

Chief of the Tax Division, American Mining Congress

Among the vital problems now confronting the mining industry, that of taxation has reached proportions of most serious magnitude. Numerous varying, unscientific, and inequitable methods of federal, state, county and municipal taxation have produced a tax burden that is unnecessarily oppressive and difficult to sustain, especially since the inception of the present period of acute industrial depression; and to the average taxpayer the involved system of procedure in the determination, assessment, adjustment, and collection of local, state and federal capital stock, property, franchise, excise, transportation, income, profits, and miscellaneous taxes is highly technical and extremely complicated.

Some of the questions to be considered at the Mining Congress tax conference during the convention are: (1) methods for securing prompt determination of federal tax liability; (2) early settlement of cases pending from the war-time period; (3) lack of uniformity and co-ordination in the application of local, state and federal tax laws; (4) effect of the continued issuance of tax-exempt securities; and (5) new federal revenue legislation.

Determination of Tax Liability

Administrative changes in the organization and methods of the Revenue Bureau which will secure prompt determination of tax liability are vitally necessary. The annual reports of the Commissioner of Internal Revenue for 1919 and 1920 emphasize this need, and favor the decentralization of the income tax unit by transfer of the audit of returns to collectors' offices, and the adoption of measures leading to the extension of authority and discretion to field officers in order that disputed items and apparent errors and omissions may be adjusted while there is convenient opportunity for necessary conferences with taxpayers. In this connection the plan of having a board of appeals in every state to pass upon controverted questions has been suggested as one means for avoiding long delays in the final adjustment of such questions and litigation before the department and the courts. It seems highly desirable for the government to bring justice to the taxpayers rather than to compel them to seek justice at great inconvenience and expense; and to give to them an opportunity to adjust their tax liability in their respective districts without being required to appear before the Bureau at Washington.

McK. W. KRIEGH

Clarification of Procedure

Present procedure in the assessment and collection of income and profits taxes and in the prosecution of claims could be clarified and made less onerous to the taxpayers if the necessity for employing expert counsel and for traveling long distances in order to secure a proper adjustment of these matters could be removed by the further decentralization of audits and the establishment of district or state boards of review and appeals. Audits of returns by the government are now duplicated in many instances due to the system of preliminary audits in the collectors' offices, audits by the field division which has its headquarters in Washington, and audits by the various unit audit sections both before and after field audits have been made. The necessity for these various audits and re-audits may be apparent to the administrative heads of the Revenue Bureau, but the continued congestion which has existed in the organization during the past three years without noticeable diminution seems to justify the criticism of the system. The fact that so many important questions are still undetermined, thus compelling taxpayers to accept arbitrary settlements or to resort to the Federal courts for relief, has caused much of the general complaint against present methods.

Simplification of Forms

Present forms for making income and profits returns are generally acceptable to the accounting profession, but are too complicated to be easily understood and correctly executed by the average taxpayer. Even skilled bookkeepers and auditors with many years of experience have found their preparation difficult and confusing. Out of this situation thousands of disputes have developed due to the erroneous classifications or computations of items and schedules of the returns. An analysis of the form for individuals whose net incomes are in excess of $5,000 reveals the fact that deductible interest on indebtedness is called for in three separate schedules; taxes appear as a deductible item in three schedules; bad debts are included in two different schedules; expenses and repairs are classified and reported in four distinct schedules; depreciation and property losses are listed in four schedules; and income is divided into nine schedules for kinds of income and three schedules for totals. The allocation of income, expenditures, and losses to these various schedules is for the purpose of obtaining a proper classification of income and an appropriate distribution of expenses and losses in order to accurately analyze business operations; but simplicity of method promotes accuracy, while intricate and involved methods increase the possibility of error, and therefore a simpler form of return would meet with general satisfaction. A form containing two main schedules, namely, for gross income and allowable deductions, from which net income could be determined, with supplementary schedules showing such analyses of the items of the main schedule as might be required for purposes of verification, has been suggested. The Revenue Bureau, however, contends that the present forms compel taxpayers to supply necessary information which would be omitted if the forms were changed, and for that reason this plan has not met with approval.

It has been evident to those who have had constant dealing with the Revenue Bureau that the large number



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Members of the Committee on Mine Taxation

of resignations of experienced officials due to the attractions of private employment and their replacement by untrained and inexperienced clerks, has contributed to the difficulties encountered in carrying out the provisions of the law. Appropriations for the revenue service should be sufficient to permit the establishment of a salary scale high enough to encourage the highest type of efficiency, create a desire for advancement, and foster contentment in the service; political affiliations should have no influence upon promotions; and the policy of Congress should be liberal enough to provide adequately for the employment of competent officials and any needed expansion of the revenue organization.

Prompt Settlement of War-time Cases

A Federal Tax Settlement Board was recommended by the 1920 convention of the American Mining Congress, and since that time has been suggested by other organizations on numerous occasions to members of the House Ways and Means Committee and the Senate Finance Committee as the best plan for facilitating the settlement of tax cases pending from the war-time period; but it is believed that the program of economy adopted by the present Congress has prevented the consideration of such a plan, there being a general feeling of aversion in Congress to the creation of any new board or commission, although it is conceded that some definite action must be taken immediately to secure the prompt adjudication of these delinquent adjustments if the industry of the country is to reach a normal status. It is safe to assume that a competent, non-partisan, independent board could be more satisfactorily dealt with than any agency or authority whose creation or appointment is influenced by policies of political expediency.

PAUL ARMITAGE
Chairman of the Committee on Mine Taxation, American Mining Congress

State and Local Taxes

Under existing laws there is a lack of uniformity in the methods of agencies of the federal, state, county, and city governments charged with the determination, assessment, and collection of the various taxes, and new measures frequently are adopted by state and local authorities who fail to give careful consideration to the relation which the tax burden imposed by them bears to the federal tax burden, with the result that in many instances the system, as a whole, becomes confiscatory. The mining industry, as well as any other industry, should contribute its just proportion of revenue to the maintenance of the commonwealth; but it should not be compelled to pay more than its pro rata share of either county, state, or federal taxes, and the relation between these different taxes should be adjusted in such a manner that the whole will spread equitably over every unit of the industry irrespective of its location. However this, relation has not been established, and varying rules and methods have been adopted in different sections of the country, under which mines of the same class, operating under similar circumstances and conditions, in many cases are inequitably grouped, unscientifically valued, and unequally taxed.

R. C. ALLEN

GEO. E. HOLMES

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Of The American Mining Congress

Tax Exempt Securities

Resolutions are now pending in Congress providing for a constitutional amendment which will grant Congress the power to tax future issues of state and municipal bonds, which are now exempt from taxation. The vast sums of capital which have been and are being withdrawn from normal business channels and diverted into non-productive and wasteful civic and state enterprises have contributed largely to the industrial depression and consequent labor unrest. Capital for industrial development and expansion has been scarce because of the demand for tax-free bonds, and thus the growth of many vital industries has been seriously retarded. Taxes will remain far in excess of pre-war rates for years to come, although income and profits of the mining industry, and business generally, are and will remain below the pre-war level. The exemption of any individual or class from the obligation of contributing to the support of the government in full proportion is indefensible. The great volume of outstanding tax-free securities, the abnormal demand therefor since the war, and the continued issuance of such securities undoubtedly adds to the burdens of the taxpaying public and deprives productive business of much needed capital for replacement and enlargement to keep pace with the rapidly increasing supply of labor. In view of this situation Congress should act without delay upon whatever measure is necessary to prevent the abnormal flow of capital into non-productive channels and the creation of a class of citizens who share the privilege of citizenship but who do not share the burden of taxation.

Columbus, Ohio, State Journal.

BOBBING IT

The Revenue Act of 1921

Of particular importance to the mining industry is the new revenue act. Repeal of the excess profits tax, rates of surtax above 32 percent and the transportation tax, will have a beneficial effect upon the whole country. A number of the provisions of the new act require study and analysis in order to determine what their effect will be upon industry. One of the most important changes is the amendment to section 204 of the act of 1918 which permits a taxpayer who suffers a net loss in any year to credit such net loss against net profit of the next succeeding taxable year. This privilege is restricted, however, by the definition "net loss" which excludes from allowable deductions, among other items, "(5) so much of the depletion deduction allowed with respect to any mine, oil, or gas well, as is based upon discovery value in lieu of cost," in other words, any taxpayer who has a net loss is denied the full deduction for depletion to which he would be entitled in the case of a net profit, and his net loss is limited to loss from business operations. This provision does not deprive the mining industry of any right enjoyed under previous laws, but merely restricts the application of an additional privilege granted by the new act. Other provisions which are of more or less importance are those relating to foreign traders and foreign trade corporations, which, under certain conditions, are taxed substantially as non-residents—only upon incomes derived from sources within the United States; those which change the basis for determining gain or loss in the case of the sale of gifts and other property, and exchange of property; those which relate to capital gain and capital loss; those which make personal service corporations subject to the corporation income and profits taxes; those which amplify the administrative sections by giving the Commissioner of Internal Revenue authority to sign an agreement with the taxpayer fixing final tax liability, by relieving the taxpayer from the annoyance of unnecessary examinations and investigations, and by the creation of a tax simplification board to simplify forms and procedure; and those which are designed to prevent the evasion of the surtax upon stockholders of a corporation.

The Mining Congress Tax Conference

These and many other important questions will be discussed at the Tax Conference to be held during the convention of the American Mining Congress at Chicago. The problems of taxation are growing in importance, as the tax burden will be heavy for many years to come, and the refinement of methods of taxation, of administration of tax laws, and of procedure in the determination of tax liability, which will equalize, simplify, and lessen the burden, is an accomplishment which should be reached without delay.

BUREAU OF MINES FUTURE STUDIES OUTLINED BY FALL

RESPONDING to a request made by Herbert D. Brown, chief of the U. S. Bureau of Efficiency, for a report of the new activities being undertaken by the Bureau of Mines, as well as other divisions of the Interior Department, Secretary Fall has outlined the problems with which the Bureau will concern itself in the immediate future.

An investigation will be made of the relative tendency of various bituminous coals to fire spontaneously, with particular attention to the influence of different coal constituents. It is hoped to thus determine the chief causes of spontaneous ignition of these coals and to discover precautions to be taken in their storage. It is probable that the experiments, begun on August 8, will continue for ten months.

An effort will also be made by the Bureau's experts at the Pittsburgh station to find methods for the utilization of cannel coal of the Freeport seam through a study of the gas, oil and other by-products from the bone and other constituents of this coal bed.

A physio-chemical study of sulphur in coke, begun in March, will soon be concluded. Its object is to determine how sulphur occurs in coke, whether as compounds, absorbed sulphur, solid solution, etc. Absolutely nothing was known prior to this investigation about the form in which this element occurs in coke.

The work on corrosion of metals in mine water, opened during August, will continue for ten months, having for its purpose the investigation of the corrosive action of acid mine-water from coal mines on various metals.

Investigation of surface equipment for oil-well pumping, opened in the field, with headquarters at San Francisco, in June, will not be completed until the middle of 1922. The purpose of this work is to summarize and give a comparison of the methods, machinery and equipment used for the pumping of oil wells in the oil fields of the United States.

New work has been undertaken in investigations of the relation of sulphur, unsaturated hydrocarbons and other possible gum-forming constituents in crude light oil to its suitability for motor oil.

The development of dust respirators is to be undertaken at the Bureau's Pittsburgh station, the purpose of this investigation being to determine the efficiency of existing commercial respirators on which no definite data exists and to develop a respirator suitable for all industrial uses. The investigation will extend through a period of six months.

The Pittsburgh station will undertake an investigation to obtain an accurate laboratory method for the determination of ozone and oxides of nitrogen in the presence of impurities and also a field method for the determination of concentration of ozone in houses where ozonators are used. The station will also seek to obtain a method for determining the quantity and composition of dissolved gases in boiler feed-water and a gas analysis method for analyzing these small quantities of gas.

AUGUST BITUMINOUS COAL PRODUCTION SHOWS MARKED DECREASE

IF the production record of the first eight months of 1921 is not improved upon during the last four, the total output of bituminous coal this year will be less than 400,000,000 tons. The last year of such a small production was in 1909. At the end of August production for the year was six million tons behind that of 1915, sixteen million behind 1914, thirty-eight million behind 1919, forty-six million behind 1913, sixty-six million behind 1916, ninety-one million behind 1920, 106,000,000 behind 1917 and 131,000,000 behind 1918.

Production for August and for the eight months ending August 31, for the last nine years, is shown below:

August Bituminous Production, 1913–1921

Year	August production (net tons)	Cumulative production to August 31 (net tons)
1913	41,590,000	307,000,000
1914	37,751,000	277,000,000
1915	38,161,000	267,000,000
1916	42,696,000	327,000,000
1917	47,372,000	367,000,000
1918	551,14,000	392,000,000
1919	42,883,000	299,000,000
1920	48,910,000	352,000,000
Average 1913–1920	44,310,000	323,000,000
1921	34,538,000	261,000,000

Anthracite.—Shipments of anthracite during August amounted to 5,575,115 gross tons, as compared with 5,-462,760 in July and 6,207,653 in June. The Anthracite Bureau of Information attributes the decrease to continued light demand for all sizes except stove and to a continuance of scattered colliery suspensions caused by market conditions and petty strikes.

FOREIGN EXCHANGE STABILIZATION.

By H. N. Lawrie
Economist, American Mining Congress

THE HONORABLE D. R. Crissinger, Comptroller of the Currency, in an address before the New York State Bankers' Association in June, called attention to the need for the stabilization of exchange. In the course of the address he made the following statements which emphasize the necessity for developing a constructive solution of the important problem:

"This has seemed an appropriate time and place to speak of international exchange in its relation to foreign trade. I venture that it never was so important as now, and that the wise and practical solution of its problems would represent one of the longest steps toward the security of human society.

"In a time when international exchange is so vital not only to our foreign trade and to the people throughout the world who have need for our products, we must take the broadest view of the relations among money systems.

"There is not that freedom of commercial interchanges which in normal times is the great equalizer and leveler. The situation demands attention lest the gold standard be gravely impaired; and so I come to bespeak your earnest consideration for the problem. I want you to be sure that in every wise effort to deal with it you will have the fullest support that the national fiscal authorities can give.

"Just when imaginative souls were rushing two generations ago to California and Australia to dig gold, Thomas de Quincey published an essay on California, which solemnly warned that if they kept on digging gold, it would presently become degraded in value, useless as a monetary standard, and uninteresting even as an enhancement of milady's charms. De Quincey foresaw the breakdown of the gold standard, pointing out that continued production of gold at the rate then attained could only bring cataclysm. Yet his fancy never approximated the huge production that was actually attained a few decades later when Africa, America, Australia and all the rest were turning out gold in their full flood. He was sure that gold would be debased and demonetised by the first rivulets; yet in fact a deluge was absorbed with no more effect than to establish gold as a well-nigh universal standard.

H. N. LAWRIE

"Prophecy is a dangerous business. The wisdom of one generation is apt to fall hard afoul the experience of the next. We may well avoid predicting consequences from the unprecedented conditions we see about the world today, but we will be warranted in studying the experience of other times, for whatever illumination it may shed upon the problems of today and tomorrow. We will be well advised if we go slowly about scrapping old standards and systems, but on the other hand we will be wise to consider wherein we might well modify, adapt, and modernize, the mechanism of credit and exchange."

Since the Comptroller of the Currency called attention to this subject, Congressman Louis T. McFadden of Pennsylvania, Chairman of the Banking and Currency Committee, introduced H. R. 8404, on August 21, requesting the President to invite the United Kingdom of Great Britain and Ireland and the Republic of France to participate in a conference with the United States. The bill authorizes the President to appoint three representatives of this government to conduct a joint investigation of the problem of exchange with three representatives to be appointed by each of the other nations invited. The conference is to convene in the District of Columbia, not later than three months after the issuance of the invitations by the President. The three representatives of this government are directed to report the results of the investigation and the recommendations of the conference to the Congress for action. And it is further authorized that these recommendations be reported for the individual action of the United Kingdom of Great Britain and Ireland and the French Republic, and such other nations as the conference may designate. An appropriation of $100,000 is to be made available for the compensation of the representatives of the United States, all reasonable expenses, and the proportionate share of this government of the general expenses of the conference, all subject to the approval of the Secretary of the Treasury.

In commenting upon this bill, Congressman McFadden stated that the rapid and extensive fluctuations of the exchanges of most of the world have exercised a most deterrent influence on the exchange of commodtiies and world trade, a condition which is a decided handicap to the financial recovery of all nations.

It is not the intention of this bill that disparities of exchange shall be investigated, but that some means should be found, and recommendations made, which would eliminate the hourly fluctuations which give rise to speculations in the exchanges beyond the requirements of actual trade transactions based upon the transfer of goods and credit. A periodic stabilization of the exchanges should remove, to a large extent, any incentive or necessity for speculation, and it is the opinion of Mr. McFadden that a system of stabilization with a longer periodic change, based upon the ability of nations to increase their gold reserves, reduce their outstanding currency issues, and bring their budgets into balance, would provide a still further incentive for the more rapid return to a normal financial condition, upon which depends resumption of normal trade throughout the world.

Proposals of all nations will be considered by the conference. It is recognized in limiting the conference to the three nations specified that their exchange transactions, in the aggregate, constitute the major volume of all exchange transactions, and that these nations naturally would recommend only such means for stabilizing exchange as would be beneficial, and would meet with the approval of all other countries of the world. On the other hand, the limitation imposed upon the size of the conference should expedite a harmonious solution of this problem and remove a condition of chaos from the economic and financial horizon of the world. As all recommendations formulated by the conference of the nations involved, there are, Mr. McFadden believes, no binding restrictions to hamper a free and open discussion of this subject upon which the economic freedom of the world so greatly depends.

One of the most hopeful indications that the enactment of this bill will meet with approval is to be found in the attitude of our international bankers as reported in the *Wall Street Journal* two days after the introduction of the bill, as follows:

"There has been considerable discussion recently regarding the proposed conference to be held in Washington, for the purpose of stabilizing the foreign exchanges. A bill has been introduced in Congress authorizing the President to call such a conference.

"Consensus among bankers is that this meeting may be a definite step in the right direction and can, if properly conducted, go a long way toward finding a solution to the exchange difficulties. Bankers unanimously agree that the conference should be attended by the leading international bankers, economists and level-headed business men and not by politicians.

"'Confidence and absolute co-operation on the part of all countries participating is needed,' says one banker. 'Confidence in the ability of our debtors to pay not only the existing debts, but also any further credits that might be extended, is needed,' he said. 'Confidence at the time of making a contract, that exchange will not have depreciated 10% by the time payment is made, is of vital importance to the revival of trade. If trade can be returned to normal, there is no doubt, although the process may be a long drawn out one, that the exchanges with the possible exception of Central Europeans, can be restored to parity.'

"'In a word,' said the vice president of a large bank, 'the situation can be cleared up if every country earnestly co-operates. Each country must do all in its power to balance its budget by a strict policy of national economy and taxation, by eliminating all unnecessary expenses and by reducing all necessary expenses to a minimum and finally by arresting the issue of paper currency."

Another most hopeful sign for this movement is to be found in the attitude of the *London Times*, which complains, with reason, that abnormal taxation is swallowing the investment reserve of the individual, admitting also the grievous results produced by the fluctuating values of the pound sterling, and the mark, and lays down the fiat that sooner or later international traders must come to some agreement which will stabilize exchanges.

In commenting upon this reference, the *Washington Post* made the following editorial comment:

"Until in that way or by some other approved method the exchange question is satisfactorily settled, it is hopeless to look for a resumption of international commerce on the magnificent scale or which under present world conditions a steady money market would be certain to insure. It would seem therefore to be a prime duty of statesmen everywhere to devote their earnest attention to the solving of this most practical and yet most baffling problem of modern times."

The mining industry generally is dependent upon the export trade in order to sustain full-time operation. It is not necessary, therefore, to emphasize the importance of arriving at a proper solution of a problem which seriously affects copper producers, manufacturers of copper products, producers of coal, oil and other products dependent upon an export market.

The gold mining industry is especially interested in the solution of this problem, for the reason that the entire life of the industry is dependent upon the maintenance of the gold standard. Should the gold standard be abandoned, it is apparent that gold would be reduced wholly to an industrial commodity basis, the demand for which does not normally exceed one-fourth of the world's production. It may be assumed, however, that the leading nations of the world in control of the monetary gold stock will exercise a strong influence in removing this chaotic condition in exchange which constitutes a menace to the maintenance of the gold standard.

In view of the fact that a conference may be called to investigate the possibilities of stabilization, it would indeed be premature to outline any specific proposal. On the other hand, it is essential that certain general observations should be made relative to the nature of the problem. In analyzing the present chaotic state of foreign currencies and the possibilities of stabilization, the following items should be emphasized:

1. Exchange experts are of the opinion that from 50 to 75% of the total volume of all exchange transactions have no relation to the actual movement of commodities, or, in other words, are purely speculative.

2. These experts are also of the opinion that the most depreciated currencies are those largely dealt in by speculators because of the opportunity for more profitable return.

3. The speculative transactions in foreign exchange unquestionably have a marked tendency to accentuate the variations in exchange.

4. There also seems to be no question that this speculative attack on the currency of a nation may more than offset any domestic improvement that might occur in its financial condition.

5. It may be reasonably construed from the foregoing that speculation in exchange also has a marked tendency to undermine the financial morale of nations, particularly those whose exchanges are most depreciated, and to a large degree removes the incentive for the improvement of the domestic financial position of such countries.

6. These momentary and violent fluctuations in exchange constitute a risk which must be covered by an additional item in price, penalizing our export trade in competition with other nations.

7. Speculation in exchange is even more far reaching in its influence and importance than speculation in the sale of a commodity, for exchange is the unit of measure of all commodities, and the international exchange of all commodities is governed by the stability of national currencies and their relation to the gold standard.

The problem before the Exchange Conference would seem to be the elimination of speculation in exchange. Any proposed remedy should also reflect in the exchange rate the improvement or the weakness of the domestic financial position of a nation. It should reflect ability to increase gold reserves, decrease note circulation, balance fiscal budgets, decrease adverse trade balances, and all other sound improvements in financial conditions.

In view of the imperative need of determining a constructive solution of this problem, it may be anticipated that an early hearing will be held before the Banking and Currency Committee, to which H. R. 8404 has been submitted, in order to expedite the enactment of the bill and the convening of the conference. This is a subject so vital to the interests of the mining industry that it should be fully discussed at the forthcoming convention of the American Mining Congress with a view to consolidating the support of the mining industry in its favor.

SENATORS ASK MELLON TO ACT IN BEHALF OF GOLD MINING

THE McFADDEN GOLD BILL, H. R. 5025, was referred to in Senate debate September 23. Senator Ashurst, Democrat, of Arizona, asked Senator Oddie, Republican, of Nevada, whether or not he had received any response to a letter he wrote the Secretary of the Treasury Aug. 17 last, transmitting a communication relating to the gold mining situation. Senator Oddie replied that he had not yet received an answer. The letter and communication are as follows:

August 17, 1921.

My Dear Mr. Secretary:

The following Senators have signed the enclosed resolution relating to the existing crisis in the gold mining industry of the nation and the importance of maintaining the gold standard of the world:

Tasker L. Oddie (Nevada)	Wm. E. Borah (Idaho)
H. O. Bursum (New Mexico)	T. J. Walsh (Montana)
Chas L. McNary (Oregon)	Andrieus A. Jones (New Mex.)
Lawrence C. Phipps (Colorado)	Henry F. Ashurst (Arizona)
Ralph H. Cameron (Arizona)	Key Pittman (Nevada)
Samuel D. Nicholson (Colorado)	John B. Kendrick (Wyoming)
Thomas Sterling (South Dakota)	Robt. N. Stanfield (Oregon)
Samuel M. Shortridge (Cal.)	W. L. Jones (Washington)
F. R. Gooding (Idaho)	Peter Norbeck (South Dakota)
Hiram W. Johnson (California)	Miles Poindexter (Washington)
H. L. Myers (Montana)	E. F. Ladd (North Dakota)

We will appreciate your considerate and early attention to the subject matter of the resolution and a detailed and complete reply to the questions therein presented.

Very truly yours,

(Signed) Tasker L. Oddie.

Hon. Andrew W. Mellon,
Secretary of the Treasury
Washington, D. C.

RESOLUTION ON THE GOLD SITUATION
TO BE SUBMITTED TO
The Honorable Andrew W. Mellon,
Secretary of the Treasury
by
Members of the United States Senate

Whereas. Gold is the standard of value and the basis of all credit, and its production is vitally important to the financial and commercial life of the nation and of the world; and

Whereas. The production of gold in the United States has declined from \$101,035,000 in 1915 to \$49,509,000 in 1920, a decline in excess of 50 per cent, due to the fact that the price of gold is fixed by the government, while the cost of producing gold has greatly increased; and

Whereas. The consumption of gold in manufactures and the arts increased from \$37,820,000 in 1915 to \$75,490,000 in 1919, an increase of 100 per cent, due to the excessive demand for luxuries and the fact that the government has been supplying the industrial consumers of gold with the metal at the pre-war price; and

Whereas. The normal process of deflation will not be sufficiently rapid to prevent the further decline in the production of gold and the wastage of developed gold ore resources due to the flooding of the mines; and

Whereas. The gold standard cannot be permanently maintained without gold production, and the nation is confronted today by the prospect of a heavy drain upon the monetary gold reserve which will necessitate a still further curtailment of credit; and

Whereas, Representative Louis T. McFadden, Chairman of the Banking and Currency Committee, has introduced a bill, H. R. 5025, in the Sixty-seventh Congress which provides for the maintenance of the normal gold production of the United States by an equitable adjustment between the producer and the industrial consumer of gold; and

Whereas, H. R. 5025, containing a provision to levy an excise, in accordance with the Constitution has been introduced in the House of Representatives and referred to the Ways and Means Committee thereof; and

Whereas, H. R. 5025 involving both the policy and administration of the Treasury Department has been referred by Chairman Fordney to the Secretary of the Treasury for an opinion; now, therefore, be it

Resolved, That the undersigned, members of the United States Senate, urge upon the Secretary of the Treasury the significance of his reply to Chairman Fordney in determining the status of the gold mining industry, which is vitally important to the maintenance of the gold standard and the financial security of the nation; and be it further

Resolved, That if upon the analysis of the Secretary of the Treasury reasons cannot be definitely assigned for opposing the provisions of H. R. 5025, the Secretary is requested to endorse the same in order to expedite the action of the House and permit the bill to be considered by the Senate; and be it further

Resolved, That if the Secretary of the Treasury has specific reasons for opposing the provisions of H. R. 5025, he is hereby urgently requested to formulate a proposal for enactment by Congress: first, to protect the gold mining industry from destruction, which is a serious matter irrespective of the fact that its operation is necessary as the basis of our monetary system; and second, in anticipation of the heavy foreign drain upon our gold reserve, to provide for augmenting said reserve from sources of domestic production and thereby lessen the need for the further and extensive curtailment of credit which otherwise would result.

Tasker L Oddie. Senator from Nevada
H O Bursum " " New Mexico
Chas. L. McNary Oregon
Lawrence C. Phipps Colorado
Ralph H. Cameron Arizona
Samuel Nicholson Colorado
Thomas Sterling South Dakota
Samuel M. Shortridge, California
F R Gooding Idaho
Hiram W Johnson, Cala
H. L. Myers Montana
Wm E Borah Idaho
T J Walsh Montana
Andrieus A. Jones, New Mexico
Henry F Ashurst, Arizona
Key Pittman Nevada
John B. Kendrick Wyoming
Robt. N. Stanfield Oregon
W. L. Jones Wash
Peter Norbeck So Dakota
Miles Poindexter Wash.
E F Ladd North Dakota

GREAT STRIDES YET TO BE MADE IN MINE SAFETY AND FIRST AID

CONTINUED SUPPORT of the federal government in all mine safety work was pledged by Congressman Marion E. Rhodes, chairman of the House Committee on Mines and Mining, at the International Mine Rescue and First Aid Meet held at St. Louis, September 1-3.

"Splendid as has been the work of the Bureau of Mines in the conduct of its work and the justification for its organization which is found in the results achieved, it has not, by any means, completed its work," Mr. Rhodes said. "It has, in fact, only made a start. Every effort must be made by all concerned to achieve the condition of perfect safety. All organizations, federal, state and individual, must co-operate to this end. There is no stronger plea which reaches the ears of Congress than that which carries with it the saving of life, and you may be assured that the federal government will do its just share of this work."

First award in the combined mine recuse and first aid contest went to the Independent Coal and Coke Company team, of Salt Lake City. Second award went to the Benton District team, Benton, Ill., and third place to the Owl Creek Coal Company team, Gebo, Wyoming.

The team representing the New River Company, McDonald, W. Va., ranked first in the mine rescue contest; that of the H. C. Frick Coke Company, Leisenring, Penn., second and the Benton District team, third.

Championship honors in the first aid contest went to the United States Fuel Company. This honor called also for the Rocky Mountain First Aid cup.

Following were the winners in the first aid contests between teams from the different states:

ALABAMA, Team No. 18, Woodward Iron Co., Dolomite.
ARKANSAS, Team No. 50, Central Coal & Coke Company, Huntington.
COLORADO, Team No. 60, Colorado Fuel & Iron Company, Pueblo.
ILLINOIS, Team No. 19, United States Fuel Company, Westville.
INDIANA, Team No. 43, J. K. Dering Coal Company, Clinton.
IOWA, Team No. 52, U. M. W. of A., District 13, and Iowa Coal Operators' Association, Buxton.
KANSAS, Team No. 44, Western Coal & Mining Company, Pittsburg.
KENTUCKY, Team No. 9, Consolidation Coal Company, Jenkins.
MISSOURI, Team No. 51, Pierce-Hess Coal Company, Bevier.
NEW MEXICO, Team No. 30, St. Louis, Rocky Mountain & Pacific Coal Co., Raton.
OKLAHOMA, Team No. 63, Rock Island Coal Mining Company, Alderson.
PENNSYLVANIA, Team No. 59, Bertha Coal Company, Pittsburgh.
UTAH, Team No. 24, Independent Coal & Coke Co., Salt Lake City.
VIRGINIA, Team No. 55, Clinchfield Coal Corporation, Wilder.
WEST VIRGINIA, No. 48, Davis Coal & Coke Company, Thomas.
WYOMING, Team No. 15, Owl Creek Coal Company, Gebo.
DOMINION OF CANADA, Team No. 47, Western Fuel Company of Canada, Ltd., Nanaimo, B. C.

The mine rescue state championships were awarded as follows:

ILLINOIS, Team No. 1, Benton District Team, Benton.
INDIANA, Team No. 6, Knox County Operators' Association, Bicknell.
PENNSYLVANIA, Team No. 3, H. C. Frick Coke Company, Leisenring.
UTAH, Team No. 15, Independent Coal & Coke Company, Salt Lake City.
WEST VIRGINIA, Team No. 2, The New River Company, McDonald.
WYOMING, Team No. 4, Owl Creek Coal Company, Gebo.

At the meeting of the Joseph A. Holmes Safety Association, one of the features of the international gathering, the annual award of medals for deeds of bravery took place. Six men from Butte, Mont., were awarded medals for bravery in attempted life saving at the Leonard mine of the Anaconda Copper Mining Company They were K. P. Krueger, Lew E. Ryan, Frank Pierce, Herbert Farlin, George Reichert and John Gregovich. Alex Ogilvie and Thomas Gold, of Lehigh, Oklahoma, were awarded medals for saving a workman who came in contact with electric wires. Announcement was made of the award of medals to the nearest living relatives of Francis Henry Murphy and William Ferrington, of Franklin, Kansas, and Lasco Robinson and Clarence Williams, of Degnan, Oklahoma, who lost their lives in attempting to save stricken comrades.

In the course of an address on "Joseph A. Holmes and Safety In Mining," G. W. Traer, of Chicago, paid the following tribute to Dr. Holmes:

"The strength and nobility of Dr. Holmes' character and the usefulness of his life are indelibly recorded in the annals of the American Mining Industry.

"We sometimes say of a man that his soul is in his work when there is no soul in the work and the expression is a mere figure of speech describing intense application perhaps to a selfish purpose. In Dr. Holmes' case the expression is no figure of speech, but a true description of the humane feeling that inspired his persistent laborious efforts to lessen the toll of death and wounds in the mining industry and the want and misery that follows.

"Throughout his life his work bore more profit to others than to himself. His work as an educator, as a practical geologist and in research, investigation and experiment, all was forward looking and of great productive value to the nation. Probably no man ever was associated with him without receiving some benefit or without preserving some memory that gives a higher meaning to life than mere material gain. He was not the first to conceive a practical sentiment for greater care in protecting workingmen from death and injury, any more than Abraham Lincoln was the first to conceive the sentiment that human slavery was a malignant social disease, under which civilization could not permanently exist. But Dr. Holmes developed it greatly as a public sentiment and his diligence and zeal first gave workable force and direction to it in that form. With him as the apostle and leader the work was carried on until today your great organization stands as his monument; not a monument in insensate stone, but one that lives and expands and is a practical exponent of a great humane ideal."

PETROLEUM STATISTICS FOR JULY

PRODUCTION of lubricating oils was greater in July than in June, but that of gasoline, kerosene, and gas and fuel oil was smaller, according to the Bureau of Mines summary prepared by H. F. Mason, petroleum technologist.

The daily average kerosene production was 4,474,972 gallons, a decrease of 246,264 gallons from June. Stocks at the end of the month showed a decrease of 22,855,039 gallons.

Daily average gas and fuel oil output was 1,500,000 gallons smaller than in June. That of lubricating oils was 22,635 gallons larger (daily average) than in June. Gasoline production and consumption is shown below:

Gasoline, July, 1921

	Gallons
Stocks July 1	750,644,450
Production	419,641,815
Imports	1,127,704
Total	1,171,413,969
Exports	27,382,798
Shipments to insular possessions	2,036,398
Domestic consumption	457,758,078
Stocks end of month	684,236,695
Total	1,171,413,969

WITH THE CHAPTERS OF THE AMERICAN MINING CONGRESS

CALIFORNIA CHAPTER WATCHES CLOSELY AFTER LEGISLATIVE MATTERS

By Robert I. Kerr, Secretary

There has been no material gain in the membership of California Metal and Mineral Producers Association during the past year, due in a great measure to the unsatisfactory conditions which have confronted all branches of the industry. The curtailment in gold mining and the suspension of operations in practically all of the copper mining companies of the Association have materially reduced its income.

The first real work that confronted the board of directors during the year was the consideration of a batch of bills introduced at the forty-fourth session of the California legislature which convened January 3, 1921.

Proposed amendments to the Workmen's Compensation, Insurance and Safety Act, introduced at the suggestion of the Industrial Accident Commission, which would have increased the cost of compensation insurance over 40 percent, were defeated.

Legislation proposed by the radical element providing for the elimination of the waiting period, increased weekly benefits, the universal eight-hour work day and Sunday closing were also defeated.

A revision of certain mine safety rules relative to the use of mine rescue apparatus was accomplished upon hearings held before the Industrial Accident Commission.

Labor conditions have improved during the year. All companies report a surplus of men and a material increase in efficiency.

War-time wages have been slightly reduced in every section of the state, and aside from a strike which occurred as a result of such action in the Grass Valley district, employes have generally accepted such reductions without complaint.

An effort on the part of the large power companies of the state to further increase rates for electric energy has been defeated. Two of the largest companies have applications now pending before the railroad commission for an order fixing just and reasonable rates. Inventories and appraisement values will be submitted by the utilities in support of the applications and it will be sometime before the matter reaches a final hearing.

Very efficient service has been rendered the Association by the American Mining Congress, the parent organization, at Washington, during the year. The bulletin service covering proposed tariff legislation and discussions and proposed amendments to the income tax law have been of valuable interest to the membership, all of whom are either directly or indirectly interested therein.

The immediate response to a request for funds to be used in publicity work in behalf of the McFadden Gold Excise and Premium bill, is the best evidence of the confidence reposed in the work of the American Mining Congress, by Californians directly interested in the proposed legislation.

This Association was honored at Denver, Colorado, November, 1920, by the election of its vice president, Wm. J. Loring, as president of the American Mining Congress. Mr. Loring's untiring efforts in behalf of the mining industry and his reputation as an international mining engineer has made the gentleman an ideal occupant of this most important trust.

UTAH MINES KEPT IN OPERATION BY PITTMAN ACT

By A. G. Mackenzie, Secretary

With the exception of active prospecting for oil, the year 1920 has been the most unsatisfactory for the mineral industry of Utah for a generation past. It is safe to say that were it not for the Pittman Silver Act, none of the metal mines of the state would have continued operations. The coal mines have had a very unsatisfactory year on account of restricted market. All the properties have been operating on part time. Metal mines began to suspend ore production in December of last year. By April 1 of this year many of the most important metal mines of the state, including the Utah Copper Company, suspended ore production entirely. The year's production will be less than for many years past.

Prospecting and development work have been continued by the companies wherever possible in efforts to hold organizations together and to relieve unemployment. Some of the companies have employed double shifts at half-time so as to afford employment to as many men as possible.

Oil prospecting in southern and eastern Utah has been very active, with several of the larger interests of the country and a multitude of smaller interests at work in various localities. Commercial production has not resulted thus far but prospects are regarded as encouraging.

The metal outlook is more encouraging than at the close of 1920. Tariff legislation is expected to improve the lead situation. Every passing day, of course, brings nearer the time when demand for copper will again make itself felt. The Pittman Act assures a fair price for silver for several years to come and with these three metals in good shape all the other industries of Utah will prosper.

The Utah Chapter has engaged in various activities during the year. A committee of the chapter appeared before the Ways and Means committee at Washington in January in connection with the tariff on lead. Representatives of the chapter appeared at various hearings before railroad committees and the Interstate Commerce Commission in connection with rate on ore and bullion, in consequence of which the increase of August, 1920, on bullion was removed as to Utah on August 11.

A decision of the State Utilities Commission in the matter of electric power rates was rendered in March, giving the power company about 15 percent of the increases requested. This is a matter which had engaged the attention of the chapter for more than a year.

Several committees of the chapter are now at work on matters of legislation and arrangements are under way to hold a Metal Mining Institute this fall under its auspices.

NEW MEXICO CHAPTER HAS RESULTS TO SHOW FOR YEAR'S WORK.

By Burton Bunch, Secretary

EVEN though the year since the organization of the New Mexico Chapter of the American Mining Congress in Silver City on October 4, 1920, has witnessed the closing of the state's greatest mining industries and economic conditions generally have been adverse, the work the chapter has been able to do has, in the minds of the organizers, fully justified its existence. Naturally, its activities during the last few months of the year have included no outstanding accomplishments, beyond the sustaining of interest in the body to insure its continuance in spite of unfavorable conditions. A spirit of optimism as to a final favorable outcome of the trials that have beset has prevailed.

As this report is written, plans are being perfected for the holding of the chapter's first annual meeting in Silver City on October 3. Officers of the chapter have expressed a desire to keep it functioning even if depressing influences should appear to be taking a stand for many more months of combat. A new list of officers will have been announced, and a new policy determined upon, by the time this matter has been printed. It is to be regretted that these things cannot be reported at this time.

The first few months of the life of the chapter were very active, first with completion of plans of financing, and next with the necessity of participation in a gubernatorial campaign, during which one party's candidate injected the question of mine-taxation in such a way that action by the chapter was desirable. This candidate was defeated in the election in November, 1920.

Following the election, and early in the present calendar year, the chapter, and not individual mining men who had been the subjects of attacks in the campaign, was represented in the state capital during the biennial assembly of the legislature, at which session new features of a revenue code were enacted much less drastic than had been proposed and agitated. The chapter, through its committees, had without doubt been responsible for this more favorable consideration of the mining interests.

Recently, direct and personal services have been rendered to members of the state chapter by the obtaining of information from authoritative sources on various subjects, and it has been the effort of the executive staff to build up, during dull times, a feeling among members that these services were available. A close watch on legislative matters in the national capital has been kept, and matters of interest to the operators, both large and small, have been reported on. Such activity was the transmission directly to members of information concerning development of proposed laws to defer assessment work on claims, which effort was of great value to owners of such property, some of whom were not members of this organization.

The first year of the chapter's existence has seen the gathering together of much material for the files, relating to various phases of mining, which will be of great value when conditions have become more normal and incentive for use of such matter will be greater.

WELLS SEES BRIGHT FUTURE FOR COLORADO MINING

"THE MINER IS NOT DISCONSOLATE. He is accustomed to misfortunes and is able to face them with a cheerful smile," said Bulkeley Wells, former president of the American Mining Congress, in an address delivered recently before a Colorado business men's club.

"Though the situation is a bit dark just now, the future is bright, and it is the sight of this future that keeps the metal miners faithfully toiling away, in spite of the fact that his reward is meager today," Mr. Wells said.

"Just at present the greatest need of the Colorado mining industry is outside capital—huge amounts of it. And thanks to the numberless 'fake' mining schemes which have been perpetrated about the country, this outside capital is terribly hard to get.

"Today we find that lead has made a comfortable gain in price, while zinc and copper have made small gains in value recently. On the other hand, silver is losing value, in spite of the apparent guarantee of price establishment by the Pittman bill.

"Colorado's gold situation is not quite satisfactory for there are scores of localities that should be explored. Where surface ores have been exhausted there has been little or no search for the pockets hidden under the ground, which virtually always prove more valuable than the surface ores. Cripple Creek is a particularly striking example of this and there may be some profitable activity in that field.

"At present radium is our only really bright spot and, while we have this substance in large quantities, we are still faced with a rather slow market, for those persons who require radium for their work, and experimentation, often are unable to purchase an adequate supply because of a lack of funds.

"But, in spite of the present situation, I feel sure that the metal mining industry of the state will brighten up shortly, placing Colorado again in the front rank of the mining states."

ALASKAN COAL DEVELOPMENTS

BOTH mining and development work has been done at Alaska coal mines during the last year by the Navy Coal Commission and the Alaskan Engineering Commission. Two hundred tons a day have been mined at Eska for railroad use. In the Nenana lignite fields, operated under government lease, fifty tons a day has been mined for domestic use. At two small mines in the Broad Pass district, 1,000 tons have been taken from each mine.

Several buildings have been constructed by the navy commission at the Chickaloon mines, including a powerhouse, office, hospital, first aid building, a hotel and numerous employes' cottages. Prospecting had been conducted at Coal and Gravel creeks, but development has been very difficult.

AMERICAN TRADE with soviet Russia during the first six months of the current year dropped to $13,000,000. During the corresponding period of 1919 our imports from Russia amounted to $2,975,000 and our exports to $39,464,000, and last year our imports totaled $8,555,000 and our exports to Russia aggregated $23,500,000. This year we imported $692,000 in goods and sent over commodities valued at $12,600,000. The decline is significant, emphasizing at once the nonexistence of legal restrictions to trading with Russia and the inability of the Bolsheviki to muster either credit or cash for purchasing the necessities of life in the free markets of the world.

WILLIAMSON FIELD OPERATORS REFUSE TO DEAL WITH UNION

AFTER reading the message from John L. Lewis, president of the United Mine Workers of America, to President Harding, asking that he call a conference between the mine workers and the mine owners of the Mingo field, Harry Olmsted, chairman of the Labor Committee of the Operators Association of the Williamson Field, addressed a letter to President Harding in which he reiterated the refusal of the operators' association to confer with the union miners or to treat with them in any manner whatsoever.

That the men employed in the mines of this district do not want to be governed by the United Mine Workers of America, or forced to join that organization is fully proved, says Mr. Olmsted, by the fact that 4931 out of a cotal of 5300 so employed petitioned the subcommittee of the Senate Committee on Education and Labor, assigned to the task of investigating the facts connected with the industrial trouble here, to make no finding which would change the relations at present existing between them and their employers. There is no strike or lockout in Mingo or Pike county, declares Mr. Olmsted; who says the mines are fully manned by satisfied and contented workmen who are only asking protection and to be made free from intimidation, gunfire and murder on the part of their self-appointed guardians, the United Mine Workers of America.

"Five times within the past two years," says Mr. Olmsted, "bands of armed men have mobilized within the borders of Kanawha County, carrying rifles, shotguns and revolvers, with the avowed purpose to march through and against other counties and to control the conditions of employment in the mines of those counties. The objective point of the latest insurrection was given out as being Mingo County, but it is believed that there was another motive behind that movement as well as behind those that have preceded it—that of creating public sentiment in their favor and to intimidate the non-union coal interests into recognizing the United Mine Workers of America."

The Mine operators in this field employ non-union miners, and therefore have nothing to arbitrate with the United Mine Workers of America, and being unalterably opposed to any recognition of that organization can see no reason for being called into conference with its representatives, says Mr. Olmsted.

Mr. Olmsted's letter to President Harding read as follows:

"In considering the appeal made to you by Mr. John L. Lewis, president of the United Mine Workers of America, as reported in the newspapers Saturday morning last, we deem it proper that you should do so with the advice that the Operators Association of Williamson Field has steadily and uncompromisingly refused to deal or confer with that organization, and must continue to abstain from doing so.

"We must content ourselves in this brief communication with the statement that there is no sort of controversy between the members of this association and their employes. There happens not to be a single employe of any member of this association whom Mr. Lewis represents or for whom he is entitled to speak.

"Every mine within this coal field is fully manned and is amply prepared to produce peak tonnage, should business require, and were orders forthcoming. The production records for May and June, last passed, were record breakers in this field. The workmen in this field are, in ratio of nine to one, at the least, men who, whether from desire or intimidation or force, became members of the United Mine Workers Organization, at the outset of the strike, but later repudiated their union pledges to reclaim their jobs. Approximately five thousand of them, which number practically included every workman in the field signed petitions during June last praying the Senate Committee on Education and Labor, which committee was charged by a Senate resolution with an investigation of our labor conditions, to make no finding which would commit this field to the domination of the United Mine Workers of America. A copy of the preamble of this petition is in mail for you for your inspection and consideration.

"During the past sixteen months the name of Mingo has become a household word throughout the United States. The entire country has been looking on, an interested spectator, while Mingo County operators have blocked the game of the conspirators whose aim it was to control and submerge coal production in West Virginia. To the coal operators belonging to this association and their loyal employes is due the credit for saving the industry in this state; the people of the United States from being frozen into submission to the demands of the United Mine Workers, and the government from being subjected to the conditions through which Great Britain has just passed.

"The operators of this field do not employ private detectives to guard their property. It is true, however, that the Baldwin-Felts agency has been used in this field recently, but only for the purpose of securing advance information with respect to intended shootings, dynamitings, arson, etc., and this service has been discontinued. The charge that these men are of the lowest type and character is not true. Many of these men have been employed by the United States government through the Baldwin-Felts agency.

"We do not doubt that you are advised of the recent events within this state, wherein the officials and members of the United Mine Workers of America contrived and executed an open, armed insurrection against the officers and the laws of this state, which vicious and unlawful act properly subjects them to the charge of treason against the state. In addition to this inexcusable offense, we are prepared to show you evidence of the loss of twenty-nine human lives and the loss of hundreds of thousands of dollars of property by explosions and incendiarism, within the Williamson coal district, chargeable to the United Mine Workers of America.

"In consideration of these circumstances, which are but briefly outlined, and in further consideration of the fact that contracts with the United Mine Workers of America are futile and useless, as can be shown by dozens and hundreds of instances, this association and its various members have persistently refused to enter into any manner of negotiations with them, and feel obliged to advise you that their policy in this relation is not subject to compromise or change.

"The so-called industrial strife will cease immediately if the United Mine Workers of America are forced to discontinue their lawless actions."

LABOR HAS ITS OWN ARMED GUARDS

INCONSISTENCY, if not insincerity, is strikingly manifested by labor leaders and agitators who object to the employment of private detectives and armed guards at the mines and other industrial plants. For labor does exactly the same thing.

On September 3 President Samuel Gompers and James Lord, head of the Mining Department of the American Federation of Labor, called on President Harding. When they left the White House Mr. Gompers gave out an interview in which he attributed the blame for the war in the West Virginia coal mine region to the employment of private detectives and armed guards. Then he proceeded directly to "Labor Temple," one of Washington's palatial office buildings, which was constructed by the American Federation of Labor as national headquarters, and wherein both Mr. Gompers and Mr. Lord have offices. And at "Labor Temple" the American Federation of Labor employs its own private detective.

William H. Howlin was commissioned as a special policeman of the District of Columbia on April 24, 1917, with authority to guard "Labor Temple" and carry arms while on the premises. He was re-commissioned on May 25, 1920. He is not on the District of Columbia payroll, since he is a private detective in the employ of the American Federation of Labor. On the night of September 3, 1921, he guarded the private property of the Federation, the offices of Samuel Gompers and James Lord, and likewise such of the Federation's printed propaganda against the employment of armed guards at the mines as may have been in the building at that time.

President John L. Lewis, of the United Mine Workers of America, and the Washington attorney of the West Virginia members of the organization, each gave out interviews attributing the West Virginia troubles to the "armed guard" or "private detective" system. And the attorney wrote his interview in his office in the Munsey Building, which is guarded by armed private detectives both day and night.

Neither Mr. Gompers nor Mr. Lewis has as yet given out an interview explaining why it is all right for labor organizations and labor attorneys to use armed guards and private detectives and all wrong for mining operators and other employers of labor to do so.

THE IRON INDUSTRY IN 1920

THE FINAL REPORT of the U. S. Geological Survey on production and shipments of iron ore during 1920, made during the second week of September, showed totals within one-half of one percent of those announced in the preliminary report of last January. Co-operation between the Survey and the operators is shown to have been developed to the highest degree.

Ore was mined in the United States last year to the extent of 67,604,465 gross tons, an increase of 11 percent over that mined in 1919. The shipments from the mines in 1920 were 69,281,341 gross tons, valued at $285,006,327, which show increases of 23 percent in shipments and 44 percent in value. The average value per ton at the mines in 1920 was $4.11, as against $3.50 in 1919. The stocks of iron ore, mainly in Minnesota and Michigan, amounted to 11,378,794 gross tons, as compared with 13,097,500 tons in 1919. These figures include only ore containing less than 5 percent of manganese.

Iron ore was mined from 403 mines in 25 states in 1920, as compared with 389 mines in 24 states in 1919. A small quantity of ore from Virginia was used in the manufacture of hydrogen gas and some of the ore from Pennsylvania was used for gas purification. In all but the far western states, where the ore is used for metallurgic flux, the bulk of the ore mined was used in the manufacture of pig iron, only small quantities being used for paint. Minnesota, Michigan, and Alabama are the three large producers of iron ore. Together they produced in 1920 about 93 percent of the total for the country, and Minnesota stands preeminent in producing about 58 percent of the grand total.

Production by states is shown in the following table.

Iron ore mined in the United States in 1919 and 1920. (In gross tons)

State	1919	1920	Percent of change in 1920
Alabama	5,053,035	5,894,011	+ 17
Arizona	....	950	....
California	2,053	6,667	+225
Connecticut	5,384	3,700	− 31
Georgia	71,224	104,511	+ 47
Idaho	1,838	275	− 85
Maryland	357	1,104	+209
Massachusetts	9,509	6,639	− 30
Michigan	15,438,930	17,510,742	+ 13
Minnesota	36,000,626	39,453,173	+ 10
Missouri	53,856	54,994	+ 2
Montana	3,438	10,803	+214
Nevada	....	238	....
New Jersey	404,428	431,567	+ 7
New Mexico	225,039	274,219	+ 22
New York	871,495	920,009	+ 6
North Carolina	58,778	71,810	+ 22
Pennsylvania	627,167	734,383	+ 17
Tennessee	283,792	375,538	+ 32
Utah	44,185	36,159	− 18
Virginia	305,096	320,924	+ 5
Wisconsin	1,087,247	981,134	− 10
Wyoming	398,613	406,501	+ 2
Other States*	19,328	4,414	− 77
	60,965,418	67,604,465	+ 11

*1919: Colorado, Texas, and Washington; 1920: Colorado and Washington.

Increases ranging from 6 percent in the Chattanooga and Adirondack districts to 15 percent in the Birmingham district were recorded in 1920. The Lake Superior district, comprising all the mines in Minnesota and Michigan and those in northern Wisconsin, mined nearly 86 percent of the total ore produced in 1920 and the Birmingham district nearly 8 percent.

More ore was mined in all the ranges of the Lake Superior district in 1920 than in 1919, as shown in the table below. The smallest increase, 0.16 percent, was in the Vermilion range and the largest, 16 percent, in the Menominee. The Mesabi range produced 63 percent of the entire output of the Lake Superior district and 54 percent of the total output of the United States.

*Iron ore mined in the Lake Superior district, by ranges, in 1919 and 1920, in gross tons**

Range	1919	1920	Percentage of increase in 1920
Marquette	4,158,751	4,457,609	7
Menominee	4,863,968	5,651,542	16
Gogebic	7,368,994	8,298,206	13
Vermilion	1,051,795	1,053,518	.16
Mesabi	33,262,954	36,641,880	10
Cuyuna	1,685,677	1,757,775	4
	52,392,339	57,860,530	10

*Includes only such Wisconsin mines as are in the true Lake Superior district.

Imports and Exports of Iron Ore and Pig Iron

The imports of iron ore in 1920 were 1,273,456 gross tons, valued at $4,963,654, or $3.90 a ton, as compared with 476,461 tons, valued at $2,385,689, or $5.01 a ton in 1919. The imported ore came chiefly from Cuba, French Africa, Spain, and Sweden. The exports of iron ore in 1920 were 1,145,037 gross tons, valued at $6,198,927, or $5.41 a ton, as compared with 996,569 tons, valued at $4,308,746, or $4.32 a ton in 1919. The exports were shipped principally to Canada. The imports of pig iron in 1920 were 185,944 gross tons, valued at $12,801,834, or $68.85 a ton, as compared with 101,665 tons, valued at $6,565,106, or $64.58 a ton, in 1919. The exports of pig iron in 1920 were 216,828 gross tons, valued at $10,074,377, or $46.46 a ton, as compared with 321,261 tons, valued at $12,313,183, or $38.33 a ton in 1919. The statistics of imports and exports were compiled from the records of the Bureau of Foreign and Domestic Commerce.

The production of pig iron, excluding ferroalloys, as reported to the Geological Survey, was 36,242,748, gross tons, an increase of 19 percent as compared with 1919. The quantity of pig iron, exclusive of ferroalloys, shipped or used in 1920, according to producers' reports, amounted to 35,710,227 gross tons, valued f.o.b. at the furnaces at $1,140,904,096, an increase of 19 percent in quantity and of 47 percent in value, as compared with 1919. The average price per ton at furnaces in 1920, according to these figures was $31.95, as compared with $25.75 in 1919.

The shipments of ferroalloys of all classes in 1920, according to producers' reports and estimates by the United States Geological Survey, amounted to 612,808 gross tons, valued at $77,519,367. Comparable figures for 1919 are not available.

The production of steel in the United States in 1920, according to the American Iron and Steel Institute, was 42,132,934 gross tons, of which 32,671,895 tons was open-hearth, 8,883,087 tons was Bessemer, and the remainder, 577,952, was crucible, electric, and miscellaneous. The production in 1919 was 34,671,232 tons, consisting of 26,948,694 tons of open-hearth, 7,271,562 of Bessemer, and 450,976 tons of crucible, electric and miscellaneous.

IRON MINE ACCIDENT RATE SHOWS DECREASE

OPERATORS' REPORTS show 106 deaths, a decrease of 33, and 9.072 non-fatal injuries, a decrease of 26, from accidents in iron mines during 1920. Bureau of Mines final tabulations were announced in mid-September.

Employes in the industry numbered 45,990 and averaged 295 working days. The fatality rate was 2.34 and the injury rate 200.49 per 1,000 300-day workers.

Of the 106 fatal accidents during the year, 76 occurred underground, 10 in shafts, 6 at open-pit workings, and 14 in surface shops and yards. At mines in Minnesota 42 men were killed, 27 in Michigan, 25 in Alabama, 6 in New York, and 1 each in New Jersey, New Mexico, Virginia, and Wisconsin. As compared with 1919, all States except New Mexico, New York, and Wisconsin showed a reduction in the number of men killed. New Mexico and Wisconsin showed no change from the previous year, there being one fatal accident in each of these two States during each of the past two years. New York suffered 6 fatalities, or one more than in 1919.

Of the total of 9,072 non-fatal accidents, 6,565 occurred underground, 169 in shafts, 1,010 at open-pit mines, and 1,328 at surface shops and yards. In the number of men injured, Michigan led the list with 3,202, followed by Minnesota with 2,943, Alabama 1,539, New York 862, Wisconsin 150, New Mexico 98, New Jersey 90, Virginia 50, Tennessee 45, and Georgia 13. These figures represent decreases for Michigan, Minnesota, New Jersey, and Virginia, while they indicate increases for Alabama, New Mexico, New York, Tennessee and Wisconsin.

GRANITE QUARRYING INDUSTRY MAKES BIG GAIN

AN INCREASE of 22 percent in the number of employes and 21 percent in shifts worked during 1920 is shown in operators' reports tabulated by the U. S. Bureau of Mines. The total number of men employed was 12,735, or 2,269 more than during the twelve months preceding.

Accidents resulted in the injury of 1,392 men, or 130.53 per thousand, and the death of 22, or 2.06 per thousand 300-day workers. For 1919 the corresponding percentages were 124.70 and 1.81.

Seven of the fatal accidents occurred in California, 5 in Pennsylvania, 3 in Minnesota, 2 each in Vermont and Wisconsin, and one each in Colorado, Maryland, and New Hampshire.

MINING EXPERIENCE OF THE NATION'S LEADING STATESMEN

THE ROMANCE OF THE MINES IS woven into the lives of many of the highest officials in Washington. The President's secretary, members of the Cabinet and scores of Senators and Representatives have at different times during their careers engaged in the production, manufacture or distribution of mineral products. Some have experienced the adventures of prospecting, others have made—or lost—good money as operators, while many can recall long years spent as workmen under and above ground.

George B. Christian, secretary to the President, was engaged in the limestone business in Marion County, Ohio, in 1915, when he became secretary to Senator Harding.

Four members of the Cabinet have, or have had, either direct or indirect connection with the mining industry. Secretary of the Interior Fall has been a mine workman and is today interested in mining operations. Secretary of State Hughes was special assistant to the Attorney General, assigned to coal investigations, in 1906. Secretary of Labor Davis began working at the age of eleven and learned his trade as a puddler in the iron and steel works at Sharon, Penn. He went to work in the Pittsburgh iron mills in 1892 and next year moved to the tin plate mills at Elwood, Indiana. He joined the Amalgamated Association of Iron, Steel and Tin Workers, was elected to various offices therein, and is still a member in good standing. The mining experience of Secretary of Commerce Hoover is very generally known.

The House leader, Representative F. W. Mondell, of Wyoming, has been engaged in mining in various western states and territories. He took an active part in the development of the Cambria mines, and was assistant land office commissioner from 1897 to 1899. The chairman of the House Committee on Mines and Mining, Representative Marion E. Rhodes of Missouri, was for many years attorney for mining firms and mine employes.

Senator Harreld of Oklahoma, was a lawyer in Morgantown, Ky., less than a decade ago. But during the interim he has made more than a million dollars out of Oklahoma oil.

Senator Ralph H. Cameron of Arizona is interested in mining, having spent many years in mining districts of the west. Senator Shortridge of California was once a mine workman.

Senator L. C. Phipps of Colorado was employed in the iron mills of the Carnegie Company of Pennsylvania, and after leaving school became vice president and treasurer of the company, retiring in 1901.

Senator S. D. Nicholson of Colorado went to that state in 1881 and spent several years in the metal mines of Leadville and the coal mines of Trinidad as miner and foreman, becoming a mine manager and later a mine owner. For many years he has been engaged in the development and management of mine properties in western states. During the war he was a member of the state branch of the U. S. Fuel Administration.

Senator Frank R. Gooding of Idaho was for many years a contractor for mining companies in the Wood River country, Idaho.

Senator F. B. Kellogg of Minnesota, as special counsel for the government, prosecuted the dissolution suit against the Standard Oil Company.

Senator Tasker L. Oddie of Nevada has had interesting mine experience. In 1898 he moved from New York to Nevada in the interest of his employers, Anson Phelps Stokes and the Phelps Estate, who were heavily interested in Nevada mining, railroad, and banking enterprises. He studied the field, acquired mining prospects and himself performed manual labor upon them until they began to produce satisfactory financial returns. He met Jim Butler, who discovered the great gold and silver camp of Tonopah in 1899, and became a partner of Butler in these locations, together with Wilson Brougher. These three men, without capital, developed these properties by their own hard work into one of the greatest gold and silver camps in the west. Goldfield, another famous camp, came into being as the result of the work of these men, and their action started the revival in Nevada mining enterprises from which many million dollars have been produced. Senator Oddie was first manager of the original Tonopah properties and developed them during the first five years to a point of successful production. He has since been active in prospecting and mine development. He is a member of the American Institute of Mining and Metallurgical Engineers.

Senator A. A. Jones of New Mexico was First Assistant Secretary of the Interior from 1913 to 1916. Senator E. F. Ladd of North Dakota is a chemist and a member of the American Chemical Society. Senator Peter Norbeck of South Dakota is a well driller by occupation. Representative John I. Nolan of California is an iron molder by trade and has been an officer of the International Molders' Union for fourteen years. Representative Walter F. Lineberger of California is a civil engineer and was engaged in mining in Mexico for nine years.

Representative Henry Z. Osborne of California is also a miner. In 1898 he moved from New Orleans to the live gold mining camp of Bodie, California, where for six years he was an editor. He is a charter member of the Chamber of Mines and Oil.

Representative Oscar E. Bland of Indiana, while a member of the Indiana Senate, was author of a number of acts concerning employes and conditions in coal mines, among them being the miners washhouse law, the wide entry law, and the miners' liability law. Representative A. H. Vestal of Indiana worked in steel mills and factories to obtain further education. Representative John W. Langley of Kentucky was formerly a law clerk in the General Land Office. Representative A. A. Blakeney of Maryland is director of the Chesapeake Iron Works. Representative John P. Hill of Maryland was government counsel in the Bath Tub and American Can Co. anti-trust cases. Representative P. F. Tague of Massachusetts is a manufacturing chemist.

Representative Samuel Arentz of Nevada was a surveyor, assessor, miner and timberman in Bear Gulch and Butte, Montana, and in the Lake Superior copper country. He graduated in 1904 with a degree of B.S., in mining engineering, from the South Dakota School of Mines and in 1906 received the degree of E.M. He has been a mining engineer and superintendent of mines in Idaho, Utah, Arizona and Nevada. He has also been a consulting engineer of the Bureau of Mines on complex ore problems and a member of the American Institute of Mining and Metallurgical Engineers. He has been a mining and civil engineer and mine operator in Nevada.

Representative E. J. Hutchinson of New Jersey is treasurer and manager of the Trenton Bone Fertilizer Company. Representative A. H. Radcliffe of New Jersey is secretary of the James Radcliffe & Sons Co., a structural iron works of Paterson. Representative A. E. Olpp, of New Jersey is chemist for the Catskill Cement Company. Representative A. N. Petersen of New York is president of the Brooklyn Foundry Co. Representative O. L. Mills of New York is director of the Lackawanna Steel Co. Representative J. W. Husted of New York is president of the New England Pin Co., of Winsted, Conn. Representative John D. Clarke, of New York worked for the Oliver Mining Co. (mining department of the Carnegie Steel Co.); was assistant to the secretary of mines of the U. S. Steel Corporation from its foundation to 1906. Since then he has been secretary and treasurer of other mining companies. Representative S. W. Dempsey of New York was special assistant to the Attorney General from 1907 to 1912 in the prosecution of the Standard Oil Co. and the New York Central and Pennsylvania Railroads on charges of giving and accepting concessions on freight rates.

Representative E. D. Ricketts, Ohio, spent the early years of his life aiding his father in mining coal in New Straitsville, Ohio. Representative Jos. H. Himes of Ohio, spent several years in the steel industry, working his way up from cinder-pit man to general manager. Representative C. D. Carter, of Oklahoma has been a mining trustee.

Representative H. C. Ransley of Pennsylvania is a member of the firm of Dunlap.

Slack & Co., dealers in oils and naval stores in Philadelphia. Representative Geo. W. Edmonds of Pennsylvania is interested in the coal business. Representative A. S. Kreider of Pennsylvania is engaged in the coal business. Representative John M. Rose of Pennsylvania was employed in the mechanical department of the Cambria Iron Company. Representative A. S. Kendall of Pennsylvania was engaged in mining coal in Somerset County, Pennsylvania. Representative John M. Morin of Pennsylvania worked in the iron and steel mills in Pittsburgh. Representative G. E. Campbell of Pennsylvania has been interested in independent oil and gas operations since 1903. Delegate D. A. Sutherland of Alaska is engaged in mining.

VARIOUS PROBLEMS BEFORE MINES BUREAU

TESTS on the sulphur dioxide leaching of complex ores from the Miami district in Arizona have been completed at the Southwest station of the Bureau of Mines at Tucson. It is considered that sulphur dioxide leaching is a demonstrated success on the most refractory silicious ores in the Southwest and also on ores containing a large percentage of acid soluble gangue. The commercial application of the process appears to hinge largely upon the successful working out of the manufacture of sponge iron. Laboratory work is being done on Walker-River silicious copper ore, which has soluble lime, iron, and manganese aggregating 10 percent acid-soluble gangue. Results so far obtained are quite encouraging.

A new method has been developed at the Northwest station of the Bureau of Mines, Seattle, Wash., for the determination of metallic iron in sponge iron, which has been found to be more accurate, simpler and more rapidly performed than any of the existing methods.

Gold ores containing stibnite have been leached with alkaline sulphides at the Northwest station. A report covering all the work done on antimony at this station will be published at a later date.

Co-operative work by the Bureau of Mines and the University of Idaho on the theory of flotation is in progress at Moscow, Idaho. Some very interesting facts on the absorption of oil by minerals have been developed, which will be given later in a detailed paper on the subject.

Investigation work on the mill sludges of the Wisconsin zinc mining district is being directed by the Mississippi Valley station at Rolla, Mo. Work has been done on the tabling of sludges and fine tailings. The system of floating the sludge table concentrates has been simplified. The system of flotation has been changed so that the "oil rock" impurity can be more effectively removed than heretofore. Several series of tests on various sludges have been made by this improved system.

A study of Neumann bands in steel is underway at the North Central station at Minneapolis, Minn.

A co-operative agreement between the Bureau of Mines and the Graphite Producers Association for an investigation as to the possibilities of a more extended utilization of American graphite is under consideration.

An investigation of various deposits of clay, mica, schist, slate, marble, talc and kaolin in Alabama, Georgia, Tennessee and North Carolina with regard to their suitability for use as mineral fillers is being undertaken by the Southern Experiment Station at Tuscaloosa, Ala.

A series of observations is being made in the brown iron ore district of Alabama for the purpose of determining definitely whether the dip compass can be relied upon in the location of ore deposits. A study of the method of mining and handling the ores of this district is also being made by the Southern Experiment Station.

PETROLEUM INVESTIGATIONS

J. H. WIGGINS, petroleum engineer of the Petroleum Experiment Station of the Bureau of Mines at Bartlesville, Okla., has completed a report on the effect of insulation on the rate of evaporation on straight-run gasoline in storage, which will later be included as a chapter in a bulletin on methods for reducing evaporation losses. He has also completed a report on pipe line losses, with particular reference to losses due to evaporation of crude at pumping stations on trunk pipe lines. Assisted by Ludwig Schmidt, Mr. Wiggins is conducting a field investigation on methods of reducing evaporation losses of crude oil while stored on the lease. This investigation will furnish oil field operators with data on evaporation losses under conditions which exist on a large percentage of the leases in the Mid-Continent field.

M. J. Kirwan, petroleum engineer, and F. X. Schwarzenbek, assistant petroleum technologist, of the Bartlesville station, are investigating underground conditions in the Deaner field in Oklahoma. A sub-surface contour map of the Kingwood sand has been completed, as well as a contour map of the Deaner sand. A number of cross-sections have been prepared in order to show the location of water in relation to the oil-bearing portion of the sand. E. L. Sproat, geological engineer, has constructed a peg model of the Deaner pool, which brings out the location of the oil, gas and water sands as well as other interesting information on underground conditions, and which will later be set up in the Okmulgee Chamber of Commerce for the purpose of showing operators the importance of underground studies. Distillations of samples of oil from the Deaner field show that the oil is of very good quality, containing approximately 30 percent gasoline and naphtha, and furnishing a fairly satisfactory crude for the production of cylinder stock.

D. B. Dow, assistant organic chemist, has prepared a report on methods of blending natural-gas gasoline, giving the results of work done for the purpose of finding a blending material that could be produced more cheaply than 50-52 naphtha and which at the same time would give a product that could be blended with straight-run gasoline without raising the endpoint of the final product. Mr. Dow has also been working on methods for measuring vapor tension of natural-gas, gasoline blends. A method for measuring vapor tension that looks promising has been developed, although sufficient tests have not yet been made to demonstrate that it can be used to advantage by the natural-gas gasoline industry.

CERAMIC INVESTIGATIONS

A NEW CERAMIC laboratory, in which investigative work regarding the clays of the Northwest will be conducted, will be installed at the Northwest Experiment Station of the United States Bureau of Mines, on the campus of the University of Washington, at Seattle.

The laboratory work in connection with a general study of the clays of Washingto has been completed, and a bulletin on the subject of Washington clays is now in course of preparation.

At the Northwest Experiment Station an attempt is being made to remove iron and silicon from kaolin to produce either millimanite or the oxide of aluminum. Clay was melted in an arcing furnace in presence of carbon; some silicon and iron were volatilized and some reduced to metal. The product contained less iron oxide and silica and more alumina than previously, but not in sufficient amounts to be sillimanite. The refractoriness of these products is to be determined by the ordinary tests.

A co-operative agreement has been effected between the United States Bureau of Mines and the Central of Georgia Railway for an investigation by the Ceramic Experiment Station, Columbus, Ohio, of the white clay and bauxites through central Georgia along the railroad right-of-way. R. B. Gilmore, formerly ceramic chemist with the Vesuvius Crucible Co., Swissvale, Pa., and H. M. Kraner, formerly ceramic assistant of the Bureau of Mines, have been assigned to this work. Preliminary tests on the effects of low calcination temperatures on the colloidal content of Georgia white clays have been made. By calcining Georgia clay to from 500 to 600°C. the absorptive properties were reduced to those of the English china clay, without materially reducing its plasticity.

Bell and Zoller Mining Company of Chicago, operating Zeigler Mine No. 1 Franklin County, Illinois, hoisted during August 133,666 tons of coal, or an average of 4950 tons per day for 27 days. This breaks all records for the output of any one mine in Illinois or Indiana for any calendar month.

Willard Rouse Jillson, director and state geologist of the Kentucky Geological Survey, with offices at Frankfort, Ky., received the doctorate SC.D. from Syracuse University at its fiftieth commencement, in June. Dr. Jillson is the author of a number of well known books and papers on the oil and gas resources of Kentucky.

NET VALUE FREIGHT BASIS UPHELD ON ORE SHIPMENTS TO SALIDA

By C. H. Farrell

THE Interstate Commerce Commission has recently decided that shippers of lead ores and concentrates from Sunset and Mullan, in the Coeur d'Alene mining district of Idaho, to Salida, Colorado, are entitled to have their rates made on the net-value basis which is in effect at Pueblo instead of on the gross-value basis which the carriers concerned desire to apply at Salida. The commission also authorized the waiver of undercharges on about 450 cars which the carriers were attempting to collect and which would have applied if Salida had been left on a gross-value basis.

The commission's decision will give satisfaction to the members of the American Mining Congress, who have watched the case closely since the St. Louis convention of the Mining Congress adopted resolutions in favor of the net-value basis. The commission reversed the decision of its examiners, who had decided in favor of the gross-value basis. It has been stated by those who have kept progress with the case that a decision in favor of the gross-value basis would have cost the western mining industry many thousands of dollars, since in such event the gross-value basis would probably have been adopted by railroads which have been using the net-value basis.

The complaints which brought about this ruling were filed by the Gold Hunter Mining & Smelting Company, the Ohio & Colorado Smelting Company and the Consolidated Interstate Callahan Mining Company. The Gold Hunter Company and the Consolidated Company mine crude ore in the Coeur d'Alene district, concentrate it at their plants, and ship the products in the form of lead concentrates which contain other metals as well, and the Ohio and Colorado Company owns and operates a smelter at Salida, where it receives the products of the two above-named companies. The rates in question are made, and have been for many years, with respect to the value, the lowest rate applying on a value not exceeding $60 per ton and being graduated up as the value is increased. The tariffs carrying the rates in question have a provision for determining the value of the ore and concentrates, which is that the smelter returns to the mine or owner before deducting the transportation charges shall be the value to be used in determining the freight charges, except that on shipments routed via the Denver & Rio Grande Railroad the valuation is to be determined by including total contents at gross valuation without deduction for freight, smelting, sampling, handling or other charges. This exception on shipments via the Denver & Rio Grande was not made, however, to apply at Pueblo and some other points. Where the rates were made under the first-named method, namely, the net-value, they were based on the assay value of the ore plus freight charges after deducting charges for smelting, handling, sampling, et cetera, that is, the treatment charges. Where the rates were made under the exception applying via the Denver & Rio Grande Railroad they were made on the gross-value method, that is, by taking 100 percent of the metal contents of the ore at the New York market prices per unit. The Denver & Rio Grande stated that it was its policy to apply the gross-value method but that it did not apply it at Pueblo because it was obliged to meet competitive conditions.

It is customary for the carriers to way-bill shipments at the highest rate shown and for the delivering agent to correct the billing to the proper rate if, upon presentation of a certificate from the smelter works, the valuation thereof is such that shipment is entitled to a lower rate. In the instant case the Ohio & Colorado Company rendered certificates to the Rio Grande upon which the rates were ultimately assessed and paid, and it developed that these certificates were being made on the net-value plan regardless of the provision that gross-value should be used on shipments via the Denver & Rio Grande. The carrier rendered a bill for the difference between the ates that had been paid and those which would have accrued if the gross-value plan had been followed originally. This bill resulted in the complaints which the Interstate Commerce Commission has just adjudicated, in which it was charged that the rates which would result if gross-value were used would be unjust and unlawful, unjustly discriminatory and unduly preferential.

The situation was simply that the carrier were trying to apply to shipments to Salida rates based on one valuation and to shipments to Pueblo rates based on a different valuation, with the result that Pueblo ultimately paid the lesser charges. Witnesses for the Smelting Company contended that their company believed it had the right to use the net-value method because it was applied at Pueblo, a more distant point, and that it felt justified in assuming that the Rio Grande knew of and accepted the method used in reaching these valuations, namely, the same one as applied at Pueblo. The commission, in reaching its conclusions, found that the net-value basis was used in Western territory by practically all carriers except the Rio Grande, and that that line used the net-value basis wherever it was obliged to meet competition. The evidence also disclosed that while there can be manipulation to secure lower rates under the net-value method, it is also true that the gross-value method is open to the same objections. There was no evidence that the net-value rates were less than reasonable and compensatory or that the higher gross-value rates on the Rio Grande have been or are justified because of more difficult and more costly operating conditions on that line. It was found that both the Rio Grande and the Northern Pacific were "clearly guilty" of undue prejudice to Salida and undue preference of Pueblo by joining in rates from the same points of origin on the lower basis to Pueblo and on the higher basis to Salida.

FREIGHT REDUCTIONS GRANTED; MORE IN PROSPECT

FOR THE FIRST TIME since the beginning of federal control, the shipper can look forward with some real hope to a reduction in rates. Just as long as the provision of the law which requires the Interstate Commerce Commission to keep rates up to a level which will produce 5½ percent or 6 percent return on a value fixed tentatively for rate-making purposes is in effect, unless we get a return to normal tonnage, there will be only faint hopes of any substantial reductions in rates. However, all concerned have at last reached the conclusion that traffic is now paying all that it can bear, and there is an indication that rates in the future will be made at least to some extent with due consideration to the welfare of the industries affected even though a showing that the rates are unreasonable from a transportation standpoint cannot be made.

In a general complaint attacking the rates on live stock in Western territory almost the entire record was devoted to a showing that the industry was in dire need of reduced rates, and not, as has been the practice in the past, to a showing as to the unreasonableness of the rates. The result was an opinion by the commission which recommended that the carriers lower the rates substantially, although the commission was not ready to make a finding of unreasonableness and order in the lower scale. Following this opinion the carriers went to the commission witn applications to file reduced rates in line with the opinion, effective September 20, and those applications were granted. It is significant that the commission, contrary to its usual policy in making the announcement of these reductions, did comment upon the fact that the reductions will result in an amount which has been estimated to be upwards of ten million dollars, and the statement concluded:

"It is the hope of the Commission that the reduced rates will prove of material benefit to the western live stock raisers, who have been heavily affected by the rapid decline in ive stock prices since July, 1920."

Only a few days before the commission had announced approval of applications for authority to make reductions, on five days' notice, in the rates on sand, gravel and crushed stone, between practically all points in trunk line territory. These are the rates for which the building material people have been contending so earnestly for a long while, and the commission in making this announcement stated:

"A large volume of movement of these commodities for roads, buildings and other construction work, will be affected and it is expected that the annual reduction in transportation charges will be much in excess of a million dollars."

In the past few days there has also been announcement made as to substantial reductions in the rates on grain, and the whole grain rate adjustment in the west is now pending before the commission and many believe that further reductions will be approved.

Leaving the rate situation, which is more favorable than it has been in a long time, we pass on to:

EARNINGS: Here we find an even more favorable situation, because complete returns for the month of July indicate that the carriers had a net railway operating income of $69,485,000, which is the largest month they have enjoyed since October of last year. It also represents an increase of $17,000,000 over June, which was favorable as compared with May. This income produces an annual rate of return of 4½ percent on a tentative valuation fixed by the Interstate Commerce Commission for rate-making purposes, and it is immediately apparent that the roads would be on the basis prescribed in the Transportation Act were it not for the general business depression which keeps tonnage down. This showing in July was made in spite of the fact that total operating revenues were $66,000,000 less than in July of last year, which month showed a deficit of $11,878,000. This increased earning power of a lighter tonnage is made possible not only by the increased rates but most of all by the economies which are being worked out in railroad operation and the reductions in wages which the United States Labor Board allowed to go into effect on July 1. Taking the eleven months since September 1 of last year, when the guaranty by the government expired, the carriers have earned on a basis of 2.6 percent, using the tentative valuation referred to above. As an indication of how the operating expenses of the carriers are dropping it is noted that in the eastern district compared with last year there was a decrease of 32.5 percent, in the southern district a decrease of 26.1 percent, and in the western district a decrease of 26.7 percent. Not only in the reduced rates and the increased earnings can we find comfort, but there is some little encouragement in the figures on:

TONNAGE: Here we find for the week ended September 3, which are the last figures available, that the carriers show a slight increase over the preceding week in the number of cars loaded with revenue freight, for the fifth consecutive time. While this week is below the same week of last year, nevertheless it is the largest one since December 11, 1920, and as it is being compared with the weeks immediately preceding it there is justification in the belief that tonnage is surely but slowly getting back to normal. A normal tonnage plus the wage reductions and the economies in operation which are being put into effect should mean that the carriers in the near future will be earning a fair return upon the value of their property and that the shippers will be paying rates which will promote business and make possible the movements of their commodities.

CAR SUPPLY: We still have on the railroads of America a very large number of cars idle. On August 31 there were 467,815 freight cars not working, and out of that number 221,375 were in need of repairs. The number on August 31 was 23,584 less than on August 23, indicating that the movement of traffic increased during the week.

GREAT POWER POTENTIALITIES OF COLORADO RIVER

THE GRANT by the Federal Power Commission of a preliminary permit to James B. Girand for development of 120,000 horse power at a single site on the Colorado River in Mojave County, Arizona, marks an epoch in hydroelectric development in the southwest.

There is more power available for development on the Colorado than on any other single river in the United States. It has been estimated that the maximum potential energy available for development in the Colorado River drainage basin exceeds 5,900,000 horse power. Of this only 439,000 horse power has been utilized, though there are eight applications now on file with the Commission for development on this river, involving over 3,000,000 horse power of primary power.

Mr. Girand proposes to construct a masonry dam 250 feet high at a point just above the mouth of Diamond Creek to back water up the river about 25 miles, and has already made foundation explorations for the dam under a permit from the Interior Department issued some time before passage of the Federal Water Power Act. As the river is subject to a wide variation in stream flow, special provision must be made to insure a spillway capacity sufficient to discharge the flood waters on occasion, and Mr. Girand will make a special investigation of this feature, one year being allowed under the preliminary permit within which to collect and prepare the data requisite for license.

PETROLEUM LAWS OF ALL AMERICA

JUDGE J. W. THOMPSON, law examiner of the Bureau of Mines, is the author of a publication on the above subject which the Bureau is distributing as Bulletin 206. As its title indicates, the bulletin includes the petroleum laws of the United States, the several oil producing states of the United States, and of Canada, Mexico and the republics of Central and South America. The purpose of the report is to provide a handy volume for those interested in exploration and exploitation.

The petroleum laws of the Spanish-American republics are usually supplemented by decrees of their presidents, which serve the purpose of regulations. Such decrees may not change or annul absolutely a congressional enactment, but they may in effect modify the application and enforcement of the laws. These decrees may be issued at any time, and it is highly important for concessionaires to keep advised as to the latest decree. The same statement applies to the orders in council issued by the Canadian government. The commissions of many of our own states have wide authority in regulating the operations of state laws, and their regulations are subject to change and amendment. Compliance with any such decrees, orders in council, and rules of the state commissions is as essential as obedience to the laws themselves.

Copies of Bulletin 206 may be obtained by writing to the American Mining Congress, Washington, D. C.

Mining and Petroleum Digest

NEW USES FOR COPPER

NOT TO BE OUTDONE by the zinc people, the friends of copper are conducting a semi-campaign in behalf of the extended use of the metal. "Make it of copper" is recommended as a slogan by *Iron Ore* (Ishpeming, Mich.), which thus discusses its uses and proposed uses:

"Copper is the ideal metal from which to make screens, gutters, wire and all articles subjected to the elements that are made from metal. Undoubtedly copper and brass could be applied to many new uses in the making of which a considerable tonnage would be consumed. The automobile and truck manufacturers and the ship builders are the heaviest users of copper; the Ford company alone using about 10,000,000 pounds annually. It will be a surprise to many people to learn that 2,000,000 pounds of copper are used in the making of pins each year, and there is none of this recoverable as scrap, either. Where the pins go is still a mystery to many people. Unaccounted uses include the copper used in naval construction, in boat building, in general machinery manufactures, in hardware not before included, in ornamental work, in bells, boots, shoes, harnesses, trunks and bags, besides the immense amount used in repairs on automobiles, locomotives, ships, etc. Much copper is annually worn out in bearings of locomotives, cars, etc., and this is gone forever. Nearly all the copper used in ammunition is lost, and there isn't the accumulation of scrap that one might imagine. Copper used in roofing lasts a lifetime and does not come into scrap supply. Copper going into bronze and other alloys is not generally recovered when the articles give out.

"New uses for copper ought to be discovered and the metal employed wherever it is practicable. It ought to replace all the substitutes brought out during the war period and for which it serves the customer much better. It ought to be more largely employed in automobile bearings, because the bronze bearing is infinitely better for this purpose. Car users ought to insist on bearings of bronze. The parts subjected to the greatest stresses ought to be made of the best. It would save big repair bills and much annoyance. Every wash boiler ought to be made of copper because it is the most economical in the long run. Copper is the ideal metal for radiators, as it has a much higher radiating power, more than one-half that of cast iron or steel. A radiator one-half the size of the present kind would do more heating or cooling according to the needs of the consumer. In a building the copper radiator would be twice as efficient as the one of iron, would occupy less than half the space of the latter, would be much lighter to handle and less liable to breakages from freezing. On the automobile it would be twice as efficient in getting rid of the heat of the motor, and would need to be only one-half the size of the present radiator. There would be less trouble because of the lesser number of parts. "Make It of Copper" ought to be a familiar slogan in all copper-mining districts of our country. This is the time to get the subject discussed and popularized. Let us all plan to have it made of copper wherever possible."

COL. JACKLING IS TOLD HOW TO GET WAGE INCREASE

AN AMUSING OCCURRENCE took place in Salt Lake City and the following account thereof is taken from the *Salt Lake Tribune:*

Col. D. C. Jackling, chairman of the board of the Utah Copper Company, was interviewed by an agent of the Salt Lake office of a correspondence school the other day in Salt Lake and asked to take a course, the agent not recognizing him.

"You see," explained the agent, "you will get a much better salary after completing one of our courses."

"I see," Colonel Jackling replied. "How much do you get a week might I ask?"

"Why, almost $40 a week," replied the agent.

Just then a third party stepped up and addressed the prospect by name, whereupon the agent fled.

CLARK IS OPTIMISTIC ABOUT COPPER FUTURE

ABOUT A YEAR WILL ELAPSE before the copper mines are working full force again, in the opinion of W. A. Clark, owner of the United Verde Copper Mine and former United States Senator from Montana. Although the famous "Copper King" is 83 years old, he is still "full of pep" and is thoroughly conversant with the mining situation. Recently he left Butte for San Francisco, where he expected to sail for Honolulu, to be back in New York in October. During a stop-over on his journey, he gave the following statement to the *Oatman Mining Review.*

"This country is too big and the people are too high a grade to remain inactive long. The copper market right now is almost the flattest thing I know of, but it will not remain that way. As soon as things get straightened out in Germany there will be a big demand for copper all over Europe. We could sell copper now, but would not get the price of its production, and I will not sell it that way. Others feel the same, and we have formed a pool in this country of $40,000,000 to protect the copper interests. We have something like one billion pounds of copper ready for the market. This does not mean, however, that the mines will remain shut down until all that is disposed of. Just as soon as there is a demand and the product starts to move, the mines will begin work again. I believe it will be a year before things get going in full blast at the copper mines."

RELATIONS BETWEEN THE MINES AND NATIONAL PROSPERITY

MINING affords a conspicuous example of the unbalanced state of industry generally, in the opinion of the NATIONAL CITY BANK OF NEW YORK. The August financial review of this institution makes use of the figures as to mine tonnage heretofore published by the American Mining Congress, and points out the relation between the depression of the mining industry and the railroads. It continues:

"It is conservatively estimated today that the metal mining industry as a whole is operating at not more than 50 percent of capacity. The inter-dependence of industry is illustrated by the fact that the railroads not only depend upon the mines for the bulk of their revenue, but the mines depend largely on the buying of the railroads for their own prosperity.

"In the copper industry four out of every five men normally employed are today out of work. Wages of those who are working are at their pre-war level—$4.00 per day for common labor in the Rocky Mountain region, as compared with $6 a day during the war.

"On the other hand, wages for common labor at the anthracite mines are from $6.50 to $7.00 a day, representing an estimated labor charge per ton of $4.07, as compared with $1.80 in 1913. Mining thus affords a conspicuous example of what has been referred to in this letter many times before: the unbalanced state of industry generally. The metal miner has been forced by economic conditions to take drastic wage cuts that have brought his pay down to pre-war basis; the coal miner, on the other hand, is working under a national agreement which runs to April, 1922, and has taken no reduction in the wage rate. The high wage rate, is of doubtful value to the bituminous miner, however, because the demand for coal has fallen to about 8,000,000 tons per month, or approximately 30 percent from full production. As a result of high mining costs, high-priced coal is a factor in high railroad charges, while high-priced coal and high railroad charges figure large in all industrial costs, and are among the chief factors in the industrial depression which throws coal-miners out of employment and in keeping up living costs."

HOLDS PUBLIC IS THE REAL EMPLOYER OF LABOR

THE FALLACY that wage controversies concern employers and their employes only is pointed out and ably controverted by the NATIONAL CITY BANK OF NEW YORK in its *Monthly Business Review.* This institution takes the entirely sensible view that the public, after all, is the real employer and that its interests are equal to, if not greater than, all other parties to any economic controversy. We quote:

"There are several misconceptions of the wage question which appear persistently in everyday discussion. One is the common assumption that wages are an issue between employers and employes, with nobody else involved. Of course the public is the real paymaster, and in the last analysis the public is composed chiefly of the wage-earners themselves. Whatever they do to the public they do to themselves. The employer is simply an intermediary who plays a useful part by organizing industry and undertaking to pay a fixed wage, but unless he gets full reimbursement from the public he is soon out of business.

"Another common mistake is that which lays all emphasis upon money wages. The value of money is in what it will buy. The standard of living is not fixed in the wage scale; it consists of a certain standard of comfort, certain supplies of consumable goods. The real compensation of the worker for his own labor comes in the products and services of others.

"While prices were advancing the labor leaders were quick to claim that money was nothing but a medium of exchange and did not represent their real compensation. They insisted upon wage increases to compensate for loss of purchasing power, and got them.

"Now the situation is reversed. The farmer is in the same situation that they were then. His purchasing power has fallen off, and his standard of living has been lowered. The labor leaders are not fighting to defend their own standard of living, but to raise it permanently at the expense of the farmer. That may not be their deliberate intention, but it is the effect of what they are trying to do. Moreover, the full effect is not beneficial even to the wage earners, for it disrupts the exchanges and paralyzes industry.

GOVERNMENT BY DISBURSEMENT

THIS IS THE DESCRIPTION of Washington methods used by the *Northwest Mining Truth*. As might be imagined, the editor is greatly exercised along with thousands of others over the orgy of spending which until recently went on in Washington, and is an advocate of economy. We read:

"A friend of ours hit a nail squarely on the head the other day when he said that this was no longer a government of the people, for the people and by the people, but a government merely of disbursement. During the last two decades, and particularly in the last, we have created innumerable bureaus to cure real and imaginary abuses that have crept into the political system, until now, as Governor Lowden has said, we face the possibility of maintaining a government employe for every private citizen. Cautiously, unceasingly and cunningly, the forces of bureaucracy have moved, ever forward to the ultimate end—control of all branches of government. Once a new bureau is formed, a struggle begins to increase its appropriations. Representatives of the people are cajoled and intimidated; vast sums are wasted in publicity designed to put the common people to sleep with opiates of accomplishment; incompetent leeches are grafted on to the government payrolls and over all is a fever of desire to spend the public moneys. Economy becomes an obsolete word. In Washington the importance of a bureau is judged, not by accomplishments along the lines for which it was created, but by its works of disbursement. In our opinion the system has created a condition of intensified government and high taxation that can never be overcome until a clean sweep has been made in Washington. Bureaucracy must be felled and the very roots of paternal government grubbed out. It is folly to imagine that this country is so rich that its spending ability will never be measured. We are almost in sight of the end now. Disaster can only be averted by speedy return to first principles of government and reinculcation in the people of a desire to render real service to their kind and to their country. The barnacles of disbursement have become so weighty the ship of state must be dry-docked and scraped or stand in danger of disaster in the next storm. The initiation which made this country the marvel of the world has been put to sleep in bureaucracy. We are over-governed, over-taxed and in danger of being overturned."

SILVERTON RAILWAY JUNKING PROTESTED

GEORGE E. COLLINS, governor of the Colorado Chapter of the American Mining Congress, is protesting the proposed junking of the Silverton Railway. The following statement of the issues involved is taken from the *Silverton Standard:*

"The railway serves the Red Mountain section and extends to Joker tunnel in Ouray county. The owners have asked the Interstate Commerce Commission for permission to junk the line saying that there is no further use for it. Mr. Collins is of the opinion that the Red Mountain district is far from finished and that during the period of depression the railway should be allowed to discontinue its service but not be allowed to remove the rails. With the rails in place, according to Mr. Collins, there will always be the incentive to renew operations in that district as soon as conditions will warrant, whereas with the rails removed, it would be an impossibility to get another road. If Red Mountain is finished there should be a general junking of all railroads into the great copper camps that depend upon mining alone, but they are in the same condition at present as Red Mountain and surrounding territory."

IMPROVED COPPER OUTLOOK

ABROAD DEMAND for copper is only a question of time, in the opinion of the *Boston News Bureau*. While not so optimistic as to anticipate an immediate complete revival of the industry, the writer notes that the technical position of the metal is becoming stronger. He points out that:

"A survey of the copper situation leads to the conclusion that copper at its current low price levels is one of the cheapest commodities in all the marts of trade.

"The technical position of the metal is becoming stronger. With most of the big producing properties shut down tight, the situation is essentially different from a year ago.

"The manufacturer has the opportunity of a lifetime to secure copper at a bargain. It would be ruinous for producers to operate on a 12-cent copper market. Based on reports of deficits in 1920, and thus far in 1921, curtailment of output will continue unabated until the mines can operate under something like normal conditions.

"A broad demand for copper is only a question of time. The period of exceptional bargains will also come to an end. A big consumptive vacuum will have to be filled either this year or next."

MINING INDUSTRY NOT DEAD, SAYS BULKELEY WELLS

MEN WHO REFUSE TO QUIT should be listened to. They know what they are doing, and their perseverance should be an inspiration to those who are tempted to become discouraged. Proceeding upon this basis of philosophy, the *Daily Mining and Financial Record* (Denver) discusses the Colorado mining situation:

"It was but a short while ago that Bulkeley Wells made the public statement "the mining industry in Colorado is not dead." This statement was a fitting rebuke to those who had inadvertently become laggards in the mining business. Bulkeley Wells is in a position to know what he is talking about. He views the situation in a general as well as a detailed way, measuring Colorado against many other states and provinces that fall within the scope of his activities. He has the added advantage of his mining business in Colorado.

"That statement did not fall on deaf ears altogether. It was one of those that lend encouragement to the men who are working against odds to keep their mining enterprises moving. We hear the statement, "You can't get money for mining." Don't you believe it. It isn't true. There is capital for mining, if you really want to use it for that purpose. Quite true, capital is a little timid about loading itself down with overhead that contributes little or nothing to development or production. Money spent for that sort of overhead is a capital mortgage on the enterprise that must be figured against every ton of ore produced before success or profits can come. The investing public is wise to this and don't you forget it. But show them where their real chances or even speculative chances are good and that is all you will need to do, even at this time of tight money. The money will be forthcoming. It is being provided for enterprises right now.

"The industry must take its feet off the desk and go underground."

GEORGIA MAYOR INDICTED WITH RAILROAD STRIKERS

THAT PUBLIC OFFICIALS sometimes help strikers rather than the employers—or, at least, that they are accused of doing so—is shown by the following news dispatch from Fitzgerald, Georgia, carried in the *Washington Herald:*

"Mayor J. L. Pittman, of Fitzgerald, and eighteen strikers, under indictment on blanket charges of 'interfering with employes' of the Atlanta, Birmingham and Atlanta Railway were arraigned here today.

"The indictments were returned yesterday and practically all of the warrants were served late last night. The indicted men are at liberty under $500 bonds.

"Charges grew out of recent trouble between the strikers and the workers on the railroad. Several trains on the road have recently been dynamited, it is charged.

"The indictment charges Mayor Pittman with conspiracy with the strikers."

NATIONAL EXPOSITION OF MINES AND MINING EQUIPMENT

TEAM WORK is the essential factor for American industry in facing present day economic problems. It was co-operative team play which made possible the effective mobilization of American industry during the war, and it will be co-operative team work which will successfully solve the problems and overcome the obstacles which confront industry now.

The dominating purpose of the American Mining Congress in organizing the National Exposition of Mines and Mining Equipment was to bring together the manufacturers of mine equipment and mine machinery and the representatives of mining operations from every part of the country in order, if possible, to develop closer co-operation and a greater degree of team play.

This National Exposition of Mines and Mining Equipment—the first to be exclusively devoted to the mining industry—will visualize the remarkable story of the growth of mining in the United States and will present an interesting picture talk of the great strides which have been made in the development of labor saving machinery and other opportunities now presented for future development.

In a general way there will be three important divisions to the National Exposition of Mines and Mining Equipment, which will be staged at the Coliseum—the public exhibits, the exhibits representing different phases of the mining industry, and the great body of exhibits presented by approximately 200 representative manufacturing concerns.

Public Exhibits

The public exhibits will form an unusually notable and interesting group. They will include a special exhibit of the oil shale industry, made by the United States Bureau of Mines. The oil shale industry furnishes almost limitless possibilities for the development of future oil reserves and oil production in the United States. The government is paying particular attention to the opportunities which are presented in oil shale, and the fact that the Bureau of Mines is devoting its entire exhibit to this subject should be an incentive to further development on the part of individual producers. In addition to the oil shale exhibit there will be an unusually interesting exhibit from the United States Geological Survey, a department of the government which has done such effective work in opening up new fields for the development of mining enterprises and in keeping the mining operators fully informed in regard to mineral development. These two exhibits will be features of the central plaza of public exhibits.

Alaska presents unlimited opportunities for further mineral development. Few people in this country have appreciated its importance as a reserve store-house of mineral wealth or realized the opportunities which it furnishes for permanent settlers. The territory of Alaska has appropriated a special fund in order to make its exhibit at Chicago a special feature of the convention.

The relationships between the United States and Mexico are steadily improving. Millions of American capital have been invested in Mexican mineral development and it is believed that there will be a very close co-operation between Mexico and the United States during the coming year. The Mexican exhibit will illustrate the mining opportunities which are presented in the individual states of Mexico and will give to the average spectator a particularly interesting picture of ore samples and of mineral development.

JOHN E. MILLER,
Superintendent of Exposition

In addition to these two remarkable exhibits there will be interesting exhibits from a number of the great western states which will illustrate mining development and opportunities for further mining enterprises. Special attention should be given to the exhibits from California, Utah, Colorado, Arizona, and the purely mining districts in other states. Plans are being worked out for an especially representative exhibit from the great mining district along Lake Superior, including the famous iron mines of the Mesabi range and the development in the Michigan peninsula and in Wisconsin.

Plans have been made for special exhibits of the coal industry, including educational exhibits to be furnished by the Anthracite Bureau of Information and by several of the bituminous coal operators associations. Few laymen appreciate the cost problem in the production of coal and as far as possible this exhibit will bring out effectively some of the important cost factors and the reasons for increased prices in coal production.

The exhibits presented by manufacturing firms at the National Exposition of Mines and Mining Equipment will furnish the largest group of mine equipment, mine machinery and other mine apparatus that has ever been assembled in the United States.

There will be approximately 200 different manufacturing concerns represented at the Coliseum in Chicago and the machinery and equipment shown will range all the way from 22,000-pound loading machines to the most delicate recording and weighing instruments. Underground loading is a factor in mine production which is steadily growing in its importance and its significance. There will be a number of different types of underground loading machines shown in Chicago, as well as some interesting devices for the cleaning, grading and separating of coal.

The metal industries will be well represented in connection with manufacturing exhibits. There will be concentrating tables, grinding machines and other forms of metal mining equipment and machinery.

The entire exposition has been so staged as to make it an extremely attractive exposition and an unsurpassed opportunity for securing full information relative to the latest forms of different types of mine equipment and mining machinery.

Entertainment at the National Exposition of Mines

The management of the convention and the exposition realizes that exhibitors desire to have the general public as well as the mining men present at a great national exposition of this character. The entertainment features of the National Exposition of Mines and Mining Equipment have been worked out in order to emphasize some of the old time contests which have been so colorful a part of the mining development in the United States.

Arrangements have been made whereby different teams of Cornish wrestlers from mining districts, particularly in the copper regions of Northern Michigan and the iron ore regions in Minnesota, will compete in prize contests for the entertainment of the spectators at the exposition. Cornish wrestling has long been the sport of the mining districts and these contests will furnish plenty of action and a great deal of interest. Other arrangements have been made for entertaining the spectators at the National Exposition which will be opened Monday night, October 17th, at 8:00 P. M. with formal ceremonies.

The national Exposition of Mines and Mining Equipment is an important feature of this great meeting in Chicago, and the following representative firms will exhibit their equipment:

Ludlow-Saylor Wire Company.—Visitors to this company's exhibit, space No. 77, will be glad to find there Mr. J. E. Robertson of El Paso, and Mr. E. M. West of Salt Lake City, both on the lookout for their many friends among the mining fraternity. Many will enjoy the renewal of old friendships with Mr. Frank Low, vice-president and general sales manager of the St. Louis concern.

"Perfect" double crimped wire cloth and Rek Tang rolled slot screens, equally well known throughout the mining game, will be exhibited in connection with their various uses in ore handling. Jig screens, shaker screens—stamp, chilean, trommel screens—all are represented, from heavy space cloth for rock crushers down to the finest meshes.

A special feature of this exhibit is a display of "Perfect" double crimped wire cloth and Rek Tang rolled slot screens in connection with the Mitchell vibrating screen.

Novo Engine Company will have on exhibition a type OH Hoist, with a six H. P. engine. This is a very popular prospector's hoist and one of the chief advantages is in the fact that it can be disassembled for muleback transportation. They will also exhibit a Type W 10 H. P. pump and a Type U 6 H. P. pump. These are high pressure pumping outfits, both of which are used extensively for supplying water under unusual conditions, where the source of supply is a considerable distance from the place of operation.

The exhibit will also include a 10 H. P. Type DH Hoist and an 8 H. P. Type M Hoist. These hoists are used for general purposes about the mine.

Information will be available at the booth in connection with all of the various types of outfits as manufactured by the Novo Engine Company. The complete line of Novo equipment consists of gasoline and kerosene engines from 1½ to 15 H. P., air compressor outfits, pumping outfits, will be exhibited.

The booth will be in charge of Mr. H. G. Holmes, chief engineer of Lansing, and Mr. George C. Schaeffer of the Chicago office.

Addressograph Company.—This exhibit will be equally attractive to mine operators, superintendents and manufacturers and dealers in mine equipment. In their booths this company will have on display the latest model addressographs, ranging from the small desk models to the larger electrically operated, automatic feed machine.

The addressograph prints names, addresses and data from indestructible car index metal plates embossed with a simple to operate graphotype, by any clerk. No experience is necessary to operate either machine.

The use of the addressograph in connection with time keeping and payroll systems is simple. There is an address plate for each employe, bearing the name, his clock number, occupation, hourly rate, etc. Through the simple "cut-off" attachment any part of this data or all of it can be imprinted on clock cards and pay envelopes, or, with another attachment, names and numbers may be listed evenly on payroll sheets, etc., fifteen times faster than by pen or typewriter.

It also is used with equal facility for inventory and cost record keeping in shop, office, factory or mine. It prints exact typewriter style, fifteen times faster than hand methods, neater and with absolute accuracy.

The ribbon print addressograph "fills in" form letters with names, addresses, personal salutations (My dear Mr. Doe) and dates, with as good a "match" as best typists can obtain.

Magnetic Manufacturing Company.—This company's exhibit, in booth No. 98, will consist of a type "D" Laboratory High Intensity Magnetic Separator and a "high duty" magnetic pulley separator. Both machines will be motor driven and demonstrated in operation.

The type "D" magnetic separator will be used for testing and separating samples of various ores and minerals. All samples will be tested free of charge. This machine is particularly adapted to the concentration of such ores and minerals as zinc, lead, tin, tungsten, monozite, chrome, manganese, etc.

The "high duty" magnetic pully separator will be operated to demonstrate the value of this equipment in mines and mills as a pro tector of crushing, pulverizing and grinding machinery.

Bulletins describing the above and other Magnetic separators manufactured by this company will be available.

The company will be represented at the exhibit by Messrs. R. H. Stearns, J. P. Bethke and G. H. Fobian.

John A. Roebling's Sons Company will display at the exhibit of the American Mining Congress in Chicago on October 17 to 22, a number of glass covered cases containing samples of wire rope in its various grades and constructions. Wire rope fittings and wire rope slings in miniature will also be exhibited and a number of cases will contain examples of the proper method of attaching wire rope sockets and wire rope clips and also a line of insulated wires and cables. Catalogs on wire rope and wire rope slings will be in the booth.

Duro Metal Products Company will have on exhibit one lilly hoist controller mounted on pedestal, and having solenoid, valve, and brake regulating mechanism arranged in unit for application on electric hoists having oil or air operated gravity brakes.

One lilly hoist controller mounted on pedestal and having weighted arm, latch, and regulating cylinder for application on small hoist with hand brakes.

One lilly hoist controller with standard auxiliary equipment, as furnished for steam hoists with steam or air operated gravity brakes.

One of the controllers will be fitted with a Man-Safety attachment, to protect men by holding the speed of the hoist down to that required for men, stopping the hoist at the man landing, and showing lights in the engine room and at the shaft, to prove that the mechanism is in operation. There will also be a supply of parts from which the lilly controller is made, showing the class of workmanship, finish, and construction.

One of the controllers will be in operation to show the action of the cams, alarm bell, brake regulating equipment, etc.

Roberts and Schaefer Company are specialists in the designing and building of coal mining plants, coal washing plants, locomotive coaling stations, coal dock bridges, and coal storage plants.

They have developed and maintain an organization complete in every department for the expeditious and economical execution of such work.

They have maintained their position in the front rank of the profession by continually inventing, perfecting and placing on the market equipment for the better preparation and more careful handling and loading of coal. Some of their more noted achievements along this line include the following: The Marcus Horizontal Screen and Picking Table, the "Rands" Shaker Loading Boom, the perfecting of the Stewart coal washery, with many modifications and improvements of this system of cleaning coal, the balanced bucket type of locomotive coaling stations, including many special devices such as automatic feeders, automatic distributing cars, specially designed, automatic hoists, etc., the new shallow pit, balanced bucket coaling station; steam sand drying plants; improved cinder handling plants, a portable locomotive coaling and storage plant, the new Balanced Marcus Horizontal Screen and Picking Table, the new shallow pit automatic skip adapted especially for mines of large production.

Working models of some of this interesting equipment, also large photographs, illustrating typical plants including this equipment, may be seen.

Dings Magnetic Separator Company.—This company's exhibit may be found in Booth No. 193. Representing this company will be Messrs. E. S. Hirschberg, J. R. Manegold and R. A. Manegold.

They will show two new machines involving magnetism. The "Davis Magnetic Tube Analyzer" is a small laboratory machine weighing about 200 pounds and is the only machine capable of giving a correct and quick physical determination of the amount of magnetic ingredients in any sample. It was developed primarily for determining the amount of available iron on the Mesabi Iron Company's deposits in Minnesota. This little machine was used to determine whether or not a \$3,000,000 plant, which is now under construction and will be completed next spring, should be built and which plant will ultimately resolve itself into a \$10,000.000 or \$15,000,000 installation.

Another machine, which is also very new, is the Davis Magnetic Log Washer. The log washer is a modified ordinary log washer with magnetic plates at the bottom. The spirals agitate the finely ground ore, and the magnetic plates at the bottom attract the magnetic, and permit the non-magnetic to be discharged as pulp.

Heretofore it has been impossible to concentrate very finely divided ores containing magnetic qualities with the ordinary Magnetic Separator. The slime and such finely divided portions as will pass through 100 mesh, were always difficult to handle. The Magnetic Log Washer was designed primarily to handle these fine sizes.

In addition to these machines they will show a Magnetic Pulley such as is used extensively in the mining industry for protecting crushers and grinders from tramp iron.

All of the equipment will be connected to the electric circuit and will be in operation during the show.

Coal Industry will occupy booth No. 36 and will distribute the October Convention Number of the *Coal Industry* which will contain a complete account of the following conventions, as well as papers delivered at the respective meetings:

The Sixth Annual International First Aid and Mine Rescue Meet, held in St. Louis, September 1, 2, and 3.

The National Safety Council Annual Convention, held at Boston, Mass., September 26 to 30

The Huntington Coal and Industrial Convention, as well as The West Virginia-Kentucky Association of Mining, Metallurgical and Electrical Engineers' Convention held at Huntington, W. Va., September 19 to 24.

The American Institute of Mining and Metallurgical Engineers' Convention held at Wilkes-Barre, September 12 to 17.

They extend the heartiest welcome to everyone and will see that visitors are supplied with cigarettes and cigars, etc.

Hazard Manufacturing Company will exhibit a short length of $2\frac{3}{4}$-inch diameter crucible steel wire rope, the largest size steel rope in regular use. The breaking strength of the rope is approximately 211 tons and the safe working load, on a straight pull, 42 tons. This rope is used in a 4000 foot length on a balanced plane with a grade of 15 percent, hauling about 200 tons per trip, and the average life of the rope as determined by the work done, is 6,000,000 tons.

Display boards and individual samples will illustrate the various types of wire rope used in mining operations, including shaft ropes, slope ropes, haulage ropes, and extra flexible ropes for room hoists, scrapers, etc.

The Hazard Company has made a specialty of its "Spiralweave" electrical cable for current distribution in coal and metal mines. "Spiralweave" is their trade name for an extra heavy loom-woven covering applied to mine power cable. It is especially effective where there is danger of damage from abrasion, or from acid water or from electrolysis.

Hazard "Loreca" reel cable for cable reels on gathering locomotives, is made under U. S. etters patent issued in 1919. The patented construction prolongs the life of the cable by eliminating the principal causes of failure in reel cables, i. e., rapid wear from abrasion and cutting and stripping of the insulation and braids.

It is noted that the Hazard Manufacturing Company devotes all its energies in its Copper Department to rubber insulated wires and cables, having satisfied itself that this type of insulation is best suited for practically all classes of electrical distribution.

Various kinds of electrical cables for shaft and borehole suspension will be exhibited.

An unusual feature is the display board showing in detail the component parts of a rubber insulated cable and the various manufacturing processes, from the copper ore and crude rubber to the finished cable.

Meyers-Whaley Company.—This exhibit will occupy spaces Nos. 16 and 17 on the Main Floor of the Coliseum, and will consist of photographs, transparencies, drawings, and one Standard Meyers-Whaley Shoveling Machine complete and in operation.

Myers-Whaley machines have been in use for 10 or 12 years in many different classes of work, including coal, iron ore, lead ore, rock salt, limestone, gysum, shale tunnel mucking, etc. The machine on exhibit embodies the latest improvements made by the Myers-Whaley Company. It demonstrates the extent to which the Myers-Whaley Company has standardized its machines. Every part of this machine is interchangeable with parts of other Myers-Whaley machines of the same size. It illustrates the type of construction which years of experience have taught to be essential in machines to meet the exacting and heavy duty of loading rock, ores, coal, etc., into mine cars.

The machine will be in operation and show the very interesting M-W shovel motion, the most effective and efficient automatic shoveling device that has ever been designed. It will also show the flexibility of the machine and the ease with which the shovel is swung from side to side and the machine propelled.

An attendant and representative will be on hand to operate the machine and to answer questions.

THE Chicago Flag & Decorating Company has the exposition contract for the decorating of booths and their installation. It is hoped that all exhibitors will get in touch with this company, as the management desires all work upon exhibit booths completed well in advance of the opening date—October 17. This company will rent desks, chairs and any other furniture, supply carpets and potted plants, do carpentry work, make signs, and provide any other assistance desired. They have been in business for twenty-five years, and were awarded the gold medal at the San Francisco World's Fair for the best design and decoration on the Disston Saw Company's exhibit.

Tool Steel Gear and Pinion Company will have on exhibit a large section of a coarse pitch cut tooth gear showing approximately a $\frac{3}{16}$ inch to $\frac{1}{4}$ inch depth of treatment. They are doing this class of work with this depth of treatment right along and handling a class of gears much larger and heavier than has ever been undertaken in heat treatment work. They are manufacturing constantly large rim gears for tube mill work in the cement plant industry. These gears will run approximately 127-inch in diameter by 13-inch face and weigh on an average about four tons apiece. They have evolved a method of handling this material that makes the distortion and warpage quite negligible in work of this size, and the increased life of the material is beyond comparison with other grades of gears.

Nordberg Manufacturing Company.—This company are well-known builders of hoisting machinery, air compressors, steam engines and large Diesel engines.

Owing to their machinery being of such a special nature and large size, it will not be practicable to exhibit any of their products. However, large photographs, drawings and literature descriptive of what they have accomplished in the way of furnishing equipment to mines, will be displayed.

They will keep open house at their booth, and will be glad to have you call. A register of visitors will be convenient so that those desiring literature or any other information pertaining to their machinery, can have same mailed to them.

A representative of the company from Milwaukee will be in attendance at the booth for the reception of visitors.

American Blower Company will have an exhibit which will feature their Sirocco and Ventura Mine Fans. A wooden model of a reversible Sirocco Mine Fan will be shown together with various types of Ventura Mine Fans. There will also be one item which will probably attract considerable attention; that is, the "Watch the Ball" outfit. This outfit consists of a small Sirocco Fan holding a ball in mid air while the air is blowing out. The ball is suspended in mid air through the action of the air from the fan and this outfit always attracts a great deal of attention at any exhibit. There will also be a Sirocco Fan, No. $2\frac{1}{2}$ in size, which are furnished for the Anaconda Copper Mining Company.

The fact that the American Blower has specialized to such an extent on mining equipment, including coal mining, copper, etc., means that their exhibit at the Mining Congress and the information which they are in a position to give to those interested should be of considerable interest and really worth while.

Stonehouse Steel Sign Company will show a complete line of signs and tags for accident prevention. In 1912 the Stonehouse Company took an active interest in Safety matters and developed a small line of signs made of 18-gauge steel, fire fused porcelain enameled finish for use in the mines where permanency of code and other signals was essential. Other accident prevention sign which were designed to meet the approval o safety engineers and the various other safety bodies were added to the line gradually until this company's line of stock signs now reaches well over a thousand. They devote all of their time and effort to this one thing—Signs and tags for accident prevention. The Stonehouse Company have made codes for nearly every state in the Union and these all differ. Some of the codes are quite similar, others vary widely. Some day it is to be hoped that there will be a Universal Code of Mine Signals, probably a Federal Code. This is hoped for, because it will be the means of eliminating much confusion and many accidents and is in line with the standardization policy now in public favor.

Hercules Powder Company are leading manufacturers of explosives, blasting supplies and naval stores, their exhibit being located in booth 31. This exhibit will be prepared with the idea of presenting all of the latest developments in explosives and blasting accessories, as well as those which are already recognized as standard amongst coal and metal miners, quarrymen and others whose operations require the use of explosives. The educational possibilities of an exposition of this kind will not be overlooked and samples of raw materials together with photographs and descriptive literature of the steps necessary in the manufacture of explosives will be available to visitors who are interested. Inasmuch as the Hercules Powder Company are now the largest producer of steam-distilled pine oil, the exhibit will also include a complete set of samples of Yaryan pine-oils which have had a wide use in the flotation process ever since their introduction. Men experienced in the uses of explosives and naval stores will be on hand to answer questions which may arise and should any member come with a particular blasting problem of his own in mind, he is invited to confer on this subject with the representatives of this company at the exposition. This will be the greatest opportunity for real service of mutual advantage to the delegate and exhibitor, and it is hoped that many delegates will come prepared to seek information which can be applied to their individual problem.

A Hercules flotation engineer will also be on hand to discuss flotation matters with those who are interested in that subject.

Experience in exhibiting at the American Mining Congress conventions in the past has convinced the Hercules Powder Company that much information of mutual advantage is interchanged and it is confidently expected that the Chicago exposition will not only equal but surpass past conventions in this respect.

Henion & Hubbell Company of Chicago, and the **Harris Pump & Supply Company** of Pittsburgh, Penna., will share jointly booths 18 and 19. Both of these companies make a specialty of pumping machinery and equipment for mines. Various types of mine pumps will be on exhibit and engineers will be present to dicuss problems relative to dewatering mines.

Hardinge Company will show the Hardinge Conical Ball and Pebble Mills with the accessory parts necessary for different classes of operation. The application of the conical mill for crushing, grinding, and pulverizing as applied to chemical, industrial, and metallurgical processes, whether wet or dry, will be illustrated. The particular feature of this exhibit will be one of the small size Hardinge Conical Ball Mills operating under natural conditions. This will be set up completely and equipped with all necessary accessories. The action of the Hardinge Conical Mill which causes larger balls to crush the largest material, and the smaller balls to work on the finer material, will be featured by means of a small working glass model. The following representatives of the company will be in attendance at the exhibit: Messrs. Harlowe Hardinge, J. S. Halbert, and Roberts S. Schultz, Jr.

Mancha Storage Battery Locomotive Company exhibit will occupy booths 196 and 197. Elaborate preparations are under way which promise to make this exhibit one of the livest and most attractive of any in the Coliseum. The present plans call for a complete line of this company's products to be on display, and the various types of Mancha locomotives, with many new features incorporated, will be in operation on a standard mine track representing actual underground conditions as nearly as can be reproduced.

In connection with the locmotives, complete charging equipment consisting of motor generator sets and charging rheostats together with panel boards and recording instruments will be shown in operation.

Plans are laid also to have a very attractive display of the various types of batteries used with the "Mancha Electric Mule" together with the various electrical instruments, and assemblies of various locomotive details which will demonstrate the character of the material used and the accuracy and workmanship in the construction of the locomotives.

The above equipment will be operated by highly trained and experienced demonstrators, and the exhibit will be in charge of representatives with broad experience in the mining industry who will cheerfully furnish any information desired regarding the operation and maintenance of storage battery locomotives, storage batteries, and charging equipment, and provide for the comfort and welfare of all visitors.

American Cyanamid Company will exhibit in booth 45. There will be displayed cyanide made from the air, which was developed during the period of cyanide scarcity four years ago, and is now being used extensively throughout the United States, Canada and Mexico, for the extraction of gold and silver ores. It is produced at Niagara Falls, from nitrogen taken from the air by the means of the Cyanamid process. The steel drums in which the product is shipped will also be on exhibit.

W. M. Lalor Company are manufacturers of automatic water stills. They will exhibit the Improved "Rochlitz" Automatic Water Still, which furnishes a steady stream of pure water free from carbonic acid and volatile impurities without any attention as long as the electricity, gas or steam and the water supply holds out. It furnishes in capacities ranging from one-half to twenty gallons per hour and can be operated by gas, gasoline, kerosene, steam or electricity. There are no parts to corrode, as it is constructed entirely of copper and brass and lined throughout with purest block tin. The cost of producing one gallon of distilled water varies from one-half cent to two cents, according to the kind of fuel used. This still has the unqualified approval of all the leading Storage Battery Manufacturers. Approximately 1000 mines have installed "Rochlitz" Stills to furnish pure battery water for storage battery locomotives and miners' safety lamps.

General Electric Company will not have an exhibition but several representatives of the company will be present at their booth, Nos. 120 and 121, to meet all of their friends. They will be delighted to have anyone attending the convention to call upon them.

Goodman Manufacturing Company does not plan to have an extensive exhibit. Their exhibit will be similar to those of the Goodman exhibits at the past Mining Congress' Conventions and will consist, namely, of large pictures, bulletins, and other literature describing their equipment.

Mining Safety Device Company is planning to exhibit the Nolan Automatic Cagers as they are used at a shaft bottom, and the Nolan Automatic Horn Stop as used on a cage. In order to show the exact operation of these machines at a mine, they will have a shaft bottom on a small scale, with track built on No. 12 rails, a trip of loaded mine cars, a shaft with a cage operating therein. A trip of loaded cars will run down the track and stand against the horns of the Cager. Then, as the cage lands at the bottom, it will open the horns of the Cager and permit the first car to pass to the cage. In doing so, the wheels of the car will move a reset block from its position on the rail, which revolves the rocker shaft and closes the horns in front of the second loaded car. As the car enters cage, it is caught by the cushioned horns on the Stop and held in position for hoisting. The cage rises, car is dumped at the top, and cage returns to the bottom with the empty car. As cage lands the horns on the cage are opened and the empty car passes off, running down the runaround, while the loaded car takes its place on the cage. This operation will be repeated until the whole trip is caged, in order to show the rapid caging of cars without any assistance from the men at the bottom.

The exhibit will be in charge of Mr. James A Nolan, the inventor of the Nolan Caging Systems, and the manager of the Mining Safety Device Company. He will be assisted by his brother, Mr. Dan L. Nolan.

Federal Electric Company will exhibit in their booth, No. 143, electrically operated sirens, siren controls, the National Renewable Fuse and the National Multiphase Fuse, also electric hand lantern. All of the different types and sizes of sirens will be shown. They manufacture machines in three separate and distinct sizes. The smallest siren is known as the type "A." It has a sound penetration radius of about two city blocks when mounted out of doors and about 300 feet when mounted in a noisy crowded factory work room. It can be operated from any number of points about the property, or from the telephone switchboard, time clock, etc. he next size larger siren is known as type "B" single head. This machine has a sound penetration radius of from three-fourths of a mile to a mile under ordinary weather conditions. The largest machine we manufacture is known as our type "B" double head. This siren has a sound penetration radius of from a mile and one-half to two miles and is the machine which is ordinarily used by the mining people.

Service Motor Truck Company will exhibit their truck, known as the Service Motor Truck, which will consist of the "Red Pyramid Speed Truck," their model 15, together with a 2½ ton truck, Model 51, and the 3½ ton truck, Model 76. It is the product of four years', development and test. Work on this truck was first begun early in 1917, but was temporarily suspended owing to pressure of war work, building trucks for the U. S. Government.

The Dictaphone Company will exhibit the latest model dictaphones, which are attracting such wide-spread attention throughout the entire continent. In recent years American business men have begun to recognize more than ever that the Dictaphone is not only a machine for use in writing letters, but it is becoming such a convenience to every executive in handling all communications, memoranda, instructions, putting down thoughts as they arise, that more and more companies are considering it an essential part of the equipment furnished every executive. In addition to this some astounding figures of economies which are immediately evidenced with the use of the Dictaphone, have been compiled wherever the Dictaphone has been intelligently installed as a complete system. The Metropolitan Life Insurance Company of New York City saved $40,000 in 1920 with their use, and estimate a considerable increase in savings for this year. We urge all our membe to see these latest model Dictaphone a. ear from the representative of the Dictaphone Company, who will be in attendance at the booth, No. 173, the facts about these economics and the convenience of the Dictaphone.

Atlas Car and Manufacturing Company will exhibit a low type Storage Battery Mine Locomotive particularly adapted for gathering coal in thin seam mines. The outstanding feature of the Atlas Locomotive is that it is provided with two driving motors mounted in exceptionally heavy driving units similar to the construction used for years on trolley locomotives. On account of the use of two motors the Atlas Locomotive has more power and consequently higher efficiency than other types of low coal battery motors. In addition to the large motor capacity the machine is provided with a patented drive unit of exceptionally substantial design. This drive unit is arranged to house the double spur gear reduction which is used to drive each axle and to provide adequate lubrication and absolute protection for the gearing. The protection of the axle gear itself is exceptionally substantial. The gears, which are of tool steel brand noted for their long wearing qualities, are mounted on ball bearings to insure easy running and accurate alignment throughout their life. The controller has been especially designed for Atlas locomotives and is of very rugged construction, having removable drums, self-aligning fingers and being of metal construction throughout. All of the other accessories are of the same rugged construction so that the manufacturers of these machines claim for their product the longest life and the highest efficiency of any storage battery locomotive on the market.

Fulton-Kenova Mine Car Company, owning and operating the Fulton Pit Car Company at Canal Fulton, Ohio, and the Kenova Mine Car Company at Kenova, West Virginia, will exhibit a wooden mine car such as is being used in the Illinois Field. This car will be complete in all details and will carry the latest improvements. Samples of the plain bearing and Hyatt equipped wheels manufactured at the Canal Fulton Plant will also be a part of the exhibit.

The Kenova Mine Car Company will exhibit a tight end mine car such as is being used quite largely in the West Virginia field. In order to convey to the operators just how this car can be made in both steel and wood, one side will be made of steel and the other of wood construction and one end steel, while the other of wood. This is considered a unique idea and should attract attention. This exhibit will be complete with a display of their standard truck, the axles of which will be fitted with their plain bearing wheel and the various styles of Hyatt equipped roller bearing wheels. There will also be on display some axles and some loose wheels as well as bumpers and hitchings.

The booth will be decorated with photographs of the wheels and various mine cars and during the Exposition Mr. C. K. Myers, President, assisted by Mr. W. H. Taylor, Vice-President, and Mr. W. J. Kearns, Sales Manager, will be present to meet their friends. Advertising novelties, literature and cigarettes will be distributed during the exposition.

Service Motor Truck Co.—In it the principles of Service Scientific Cushioning are highly developed, and the "works" of the truck are carefully protected from each of the five fundamental shocks, strains and stresses to which all motor trucks are subject: (1) Load Stresses, (2) Road Strains, (3) Road Shocks, (4) Driving Strains and Shocks, (5) Braking Strains and Shocks. The entire truck is carried on a three point support, so that all strains and twisting of body, hood, radiator, seat and steering mechanism are also removed from the frame. A quite remarkable improvement is made in the riding qualities. With the front spring arrangement as shown, the lift on the front end of the truck, when one wheel strikes an obstruction, is only one-half of that with the conventional suspension, and the rate of lift is only one-fourth. The result is that this truck rides over rough and rocky roads, or in fact, in territory where there are practically no road at all, with remarkable ease.

Electric Service Supplies Company.—This company's exhibit is being arranged by and under the direction of their Chicago office, Monadnock Building, in charge of Mr. H. H. Johnson. The following representatives of the company will be in attendance during the convention: J. W. Porter, Vice-President; Max A. Berg, Secretary; L. J. Kirby, Sales Engineer; W. J. Koch, Sales and Mining Departments; A. H. Kopprasch, Industrial Department; T. M. Childs, Steam Railroad Department; M. S. Earl, Mining and Industrial Departments; A. W. Dee, Purchasing Department; H. H. Johnson, Mining and Industrial Departments, and B. Barger of the Special Service Department. This company manufactures electrical material, electrical supplies and specialties, used particularly by steam railroads, electric railways, coal and metal mining companies, electric lighting and transmission companies, and industrial plants. Most of the important products manufactured by this company will be on display in their booth, No. 68.

Sullivan Machinery Company will exhibit, in their booth No. 57, Sullivan Hammer Drills, including Rotators of several types, Stopers, Drifters, etc., fully illustrating the very complete line of Rock and Hammer Drills made by this company; the new Sullivan Turbinair Portable Column Hoist; Sullivan Coal Cutter Bit Making and Sharpening Machine; a Sullivan Drill Bit Sharpening Machine of the all-hammer pattern, whose ability to preserve the quality of drill steel while making perfect bits has been demonstrated notably during the past five years; samples of bits and shanks made by these machines; and a photographic exhibit of the company's other equipment. The exhibit will be under the immediate direction of Mr. Joseph H. Brown, Local Sales Manager, Chicago.

Jacobsen and Schrader, Inc., will exhibit an operating model of a complete coal tipple showing the most modern equipment for screening, picking and loading coal. This model will be constructed along the lines of the many successful Jacobsen and Schraeder standardized tipples now installed in various parts of the country. Enlarged photographs of present installations of screens and equipment will be shown, which are of the most modern and efficient type of coal handling equipment on the market. These standardized tipples are the result of the combined effort of some of the country's best mining engineers, constructors and designers of mining machinery, and are offered complete to cover the various methods of operation, shaft mines, slope mines, and strippers. The layouts shown provide for loading on any number of tracks; the structures are of wood and steel; and of various capacities. The preparation equipment includes the Jacobsen balanced horizontal screen and picking table, the superiority of which has been time-tested and proved.

Frank S. Betz Company will have an exceedingly interesting exhibit for the mine owner and mine operator. This exhibit will include a complete line of first aid and emergency equipment from the smallest first aid packet to complete outfits for mine hospitals and emergency operating rooms. This company has produced steel operating tables and steel office and hospital furniture of the better grade since 1895, and the very modern and reasonably priced equipment offered by them at the exposition will be well worth the time taken to inspect it. A great many of the larger mines and industries, etc., in the United States have already installed Betz equipment. A very comprehensive catalog on first aid equipment including instruments, utensils, surgical dressings, drugs, pharmaceuticals and surgical appliances, is printed by this company and will be mailed to any mine physician, operator or owner upon application.

Southern Wheel Company. This exhibit will consist principally of their Hollow Axle Mine Car Truck, which they have been manufacturing for the past eight years, and at the present time have about 8000 sets in service, many of them under unusually severe conditions. The distinguishing feature of this truck is in the oiling system. The Hollow Axle is filled with grease, or oil, which feeds out of the axle into the wheel by gravity. This system overcomes the action of centrifugal force which is the main objection to the usual self-oiling wheel when running on a solid axle. The Hollow Axles are made of .35 to .40 carbon, cold drawn seamless steel tubing having an elastic limit of from 70,000 to 80,000 lbs. per square inch of area and Brinnell hardness number of 170. Owing to the carbon content, the cold drawing and subsequent annealing, and the tubular section, the Hollow Axle is almost twice as strong as the solid axle which weighs more. The wheel is made in one piece; the only work done on the wheel is to bore the hole for the axle.

Robert Holmes & Bros., Inc. Some very interesting machinery will be exhibited by this company, in their Booth No. 27. There will be displayed a miniature Automatic Car Lift, Sheave Wheels and loading machinery. The machinery will be operated by compressed air, and will afford the opportunity of seeing how this firm has made it possible for any operator to double his output, and cut his labor in half. Both their plain turned groove type and steel lined type Sheave Wheels will be shown to good advantage. Representatives will be on hand at all times during the exposition, and will gladly answer any questions relative to coal handling equipment. Their thirty years in the equipping of coal plants have been well spent, results of which will be seen by the class of machinery which they build, and it is samples of this class that they will show at the expositions. They will appreciate it very much if all visitors will stop at their booth and register.

Mine Safety Appliances Company will exhibit the new Burrell Carbon Monoxide Gas Mask and the Burrell All-Service Gas Mask. These new types give protection against carbon monoxide, the gas which is stated in a publication of the Bureau of Mines to be the cause of more deaths than all other gases combined. The mask was recently perfected at the company's laboratories in Pittsburgh and marks the culmination of years of intensive research work dating from early in the World War. Other standard safety appliances manufactured and distributed by this company will be shown: The Gibbs Oxygen Breathing Apparatus, the Edison Electric Safety Mine Lamp, Oxygen Inhalator, and First Aid Supplies. Messrs. I. A. Palmer and George Knoll of 189 North Clark Street, the company's representatives at Chicago, J. T. Ryan and George C. Nelms, of Pittsburgh, will attend the Congress and be on hand at the exhibit.

Keystone Consolidated Publishing Company of Pittsburgh will occupy Booth No. 146. The Mining Catalog, Coal Edition; The Mining Catalog, Metal-Quarry Edition, and the Coal Catalog, combined with the Coal Field Directory, are the annual catalogs which this company publishes and they will be on exhibit at their booth.

American Manganese Steel Company will exhibit an AMSCO centrifugal pump used for handling slimes, and solids conveyed by water in mineral mines; Grinding Plates for Marcy and Hardinge Mills; Manganese Steel Gears and Pinions, steam shovel dipper teeth, elevator chain, concaves and crusher heads for gyratory crushers; jaw plates for jaw crushers, screen plates for revolving screens; and Gold Dredge buckets. All of this material will will be made of AMSCO Manganese Steel, and a part or all of this is used in practically every mineral and coal mine in operation.

Ohio Brass Company will have a complete display of O-B Overhead Trolley Materials. The familiar designs will be there as well as new products which have been added during the past year. O-B Rail Bonds and Rail Bonding Tools will also be exhibited and Electric Welding Machines of both the dynamotor and resistance type will be shown. The exhibit will include samples of O-B Hi-Tension Porcelain Insulators which are used for distribution and transmission power lines and Crouse-Hinds Headlights for locomotives, sold exclusively by the Ohio Brass Company.

Allis-Chalmers Manufacturing Company will occupy Booth No. 150 which will serve as headquarters for this company and its friends. Owing to the size of their products and their special character, the exhibit will consist largely of photographs showing the company's extensive line of mining and metallurgical machinery illustrating their applications and showing numerous installations.

Streeter-Amet Weighing and Recording Company will exhibit a mine tipple indicating and recording attachment which indicates the weight of the load on the dial and indelibly records the weight on a paper tape. The dial and recording attachment includes all weighing equipment above the scale shackle, such as beam shelf and beam shelf supports, beam stand and beam, and a large writing table conveniently located. The device automatically weighs and mechanically records, depending for the accuracy of its work only on uniformly exact operation of carefully made mechanism, and not on the uncertain human element. The recorders can be attached to any make of scale, provided capacity and design are suited to the work to be done.

Toledo Pipe Threading Machine Company will exhibit its line of pipe threading and cutting tools. These tools are made in various sizes for threading pipe from ⅛″ to 12″ inclusive. All of these tools for threading pipe from 1″ up, embody the rather famous "Toledo" receding die principle, which made possible the threading of large sizes of pipe easily and efficiently by hand. It is entirely practicable for one man to cut a 12″ thread by hand with the No.4 "Toledo" threader. The display will also contain "Toledo" pipe cut-off tools which are made in several sizes, having a combined capacity of 1″ to 10″ inclusive. Visitors to this exhibit will be much interested in the "Toledo" power drive for operating these tools. It is unique in its action.

Chalmers & Williams, Incorporated, with factory and general offices at Chicago Heights, Illinois, will devote their space to the showing of the rotary and travelling types of Ross Automatic Drop Bar Grizzly Feeders and Screens and to the horizontal type of Symons Disc Crushers. They specialize in the manufacture of crushing, screening and feeding equipment of the most modern and improved designs and in addition, are the sole manufacturers of the Burt Filters, and the Ross Automatic Drop Bar Grizzly Feeders and Screens and the Symons Disc Crushers.

Bastian-Blessing Company. The exhibit of this company may be found at Booth No. 148, where they will demonstrate in operation Rego Apparatus for welding and cutting of metals. The method of making emergency repairs with this equipment will be shown by the Rego engineers. Visitors are invited to discuss their problems at the booth. This company has developed in Rego welding and cutting apparatus a tool which is simple to operate correctly. Their patented method of mixing the gas in the torch permits the operator to forget the torch and concentrate his whole attention on the weld, where it belongs, just as a blacksmith is able to forget his hammer and concentrate his attention on the forging. The reason for this is that the Rego torch automatically develops a perfect, neutral flame; there is no chance of the operator oxidizing or burning the material. The Rego exhibit will include their complete line of torches and accessories. This line embodies a torch for every purpose and for every class of work, from the small lead welding torch for use with natural gas to the large torches used for welding heavy casting.

Hyatt Roller Bearing Company are planning to exhibit a model showing the ideal lubricating features of Hyatt Bearings. They will have on display self-aligning roller bearing journal boxes and mine car wheels, containing Hyatt Roller Bearings. The journal boxes and the wheels will be manufactured by the people who utilize Hyatt Bearings and consequently the exhibit will be of a great deal of interest. They will also have a carrier stand for a belt conveyor, and a sample Hyatt Flexible Roller Bearings for mine and ore cars, shop trucks, lineshafting, trolleys, cranes, and hoists, trolley and storage battery mine locomotives, gasoline locomotives, machine tools, etc.

Jeffrey Manufacturing Company of Columbus, Ohio, manufacture machinery and equipment of size that would make it impossible for them to have a display, but you will find at their booth bulletins describing all types of mining machines, locomotives of the trolley, gathering and storage battery type, mine fans, tipple equipment, crushers, elevating and conveying material, etc.

Westinghouse Electric & Manufacturing Company has arranged to combine their exhibit with the Baldwin Locomotive Works this year. Booths 159 and 160 have been contracted for by the combined companies, and the plans are to have a general reception space, i. e., both booths will be made up as one, with the exception that the name "Westinghouse Electric & Manufacturing Company" will appear on one side, and "Baldwin Locomotive Works" on the other. There will be available the various kinds of literature pertaining to equipment manufactured by these companies for the mining industry, such as mine locomotives, both storage battery and trolley line type, which includes the famous barsteel type of locomotive. Also, the literature will describe the Westinghouse mine motors, both A. C. and D. C., for blower hoists, cranes and numerous other motor applications. Also, the necessary control equipment will be fully described. The Westinghouse Company will be represented by Mr. N. G. Symonds of the Chicago Office, and the Baldwin Locomotive Works will be represented by Mr. R. M. Campbell of Philadelphia, Pennsylvania. The booth will be in charge of Mr. G. H. Jaspert, Department of Publicity, Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pennsylvania.

Sanford-Day Iron Works' exhibit will be in conjunction with the exhibit of the Myers-Whaley electric shoveling machine. Both the exhibit of the Sanford-Day Iron Works and of the Myers-Whaley machine will probably be moving exhibits. They propose to display particularly the operation of their automatic mine car, and to do this will have a miniature coal mine with tip house, tracks and dump, electric locomotive and mine cars running around a track in a similar fashion to the operation at the mine, and discharging coal at the tip house. This will all be in miniature. In addition to this, this company will furnish the Myers-Whaley Company, to be used behind their machine, one standard size automatic drop bottom mine car. They will also have on hand, exhibits of their car wheels of the roller bearing type, the Whitney wonder wheel, which is well known throughout the trade and is used largely throughout Illinois and the east and west, and also an exhibition of a full size model of their S. and D. Master roller bearing wheel, a new design they have gotten out.

Keystone Lubricating Company will exhibit its various mine car lubricants together with special grease guns to provide for the most efficient and economical application thereof. Also grease for use on all types of mine locomotives, mining machines, wire ropes, etc. In addition there will be a special exhibit of their Venango Gravity Feed Grease Cups and Organ Spring Automatic Grease Cups, together with grease for use therein. They will be represented by men of wide practical experience in the solving of difficult lubricating problems in connection with mine operations.

Duntley-King Pneumatic Tool Company of Chicago, will have on exhibition pneumatic tools in operation, consisting of all sizes of riveting hammers, chipping hammers, rivet cutters and electric drills. Further, they will display their complete line of accessories, such as rivet sets, hose couplings, hose, pistons and other pneumatic tool accessories.

Chase Metal Works exhibit comprises a display of manufactured non-ferrous products such as brass, copper and bronze sheet, rod, wire and tubing. Their aim will be to make the exhibit of educational value by showing the successive steps in manufacture from the casting to the finished product. The exhibit will consist of the following products: brazed tubing, showing the original sheet, the forming process, welded seam and finished material; seamless tubing, showing the original billet or cast shell with intermediate sizes during the drawing operations; rod of various alloys, round, square, hexagon and many other shapes, both drawn and extruded. Bronze rods are made for the U. S. Government under very rigid specifications. There will also be a display of sheet brass, ordinary brass alloys, bronze and nickel silver; wire, coils of wire of various composition; and miscellaneous samples of finished products, bent into various forms to illustrate the strength and ductility of rods, wire and tubing.

A. Leschen & Sons Rope Company of St. Louis, will exhibit in Booth No. 60, wire ropes and aerial wire rope tramways. Their wire rope display will consist of samples of wire ropes for all purposes, including their famous HERCULES (Red-Strand) Wire Rope, patent flattened strand wire rope, locked wire rope, locked coil cable, as well as wire ropes in all standard round strand constructions. This large exhibit of wire rope samples will afford wire rope users an excellent opportunity to study and compare the different constructions, and an experienced wire rope man will be present to explain the advantages and the particular uses to which the various types are especially suited. What will probably be the most interesting and entertaining feature of this display will be a working model of a Leschen Gravity Two-Bucket Aerial Tramway. This miniature tramway is modeled after an actual installation in West Virginia that is used for carrying coal from mine to railroad cars. While a model of only one of the Leschen systems of aerial transportation will be shown, they will have on display one of their patented friction grips which are furnished on their heavy duty tramways. This is a system that is extensively used where there are long hauls and large tonnage. Full information on all Leschen Systems of aerial wire rope tramways will be supplied by one of their engineers.

Lake Superior Loader Company will show a mechanical shoveling device that has met with success and favor in metal and coal mines. The machine is a small compact mechanical loader that seems to meet the general requirements for underground conditions. It weighs approximately 4650 pounds and the over-all dimensions are 4 feet high, 4 feet wide, and 6 feet long, small enough so that it can be transferred to any section of the mine where drifts and crosscuts are at least 5 feet x 5 feet. When operating, the Shuveloder requires 6 feet 10 inches head room above the top of rails, and the width in working place should be at least 7 feet to load economically. There are three main parts to the Shuveloder, a truck frame mounted on wheels, a platform to provide the lateral movement; and the body piece containing the operating cylinders and guides in which are the crosshead, sheaves, dipper arms and dipper function. The crowding, digging and loading movements are performed by the action of compressed air on direct thrust pistons. Cables are attached to the two sheave wheels and connected with the pistons of the digging cylinders so that the movement of these pistons revolves the sheave wheels to which are attached the dipper arms carrying the dipper. The air consumption is 150 cubic feet free air per minute at 80 pounds. With this pressure the Shuveloder is capable of lifting a load of 1100 pounds and dumping it into the car behind. The body is swung on the truck frame to either side through an angle of 45 degrees enabling the dipper to clean up a width of 11 feet. Regardless of whether the body piece is in the extreme right or left position, the material in the dipper is always discharged into the center of the car behind. A normal crew with the Shuveloder is three men, one operator and two men for exchanging cars. The average rate of loading under the different conditions that the Shuveloder is operating varies from 12 to 19 tons per hour. This includes all delays, time required for exchanging cars, laying tracks and represents the rate for the total time spent by the shoveling crew from the beginning of shoveling operations until all the material has been removed.

American Mine Door Company's exhibit may be found at Booth No. 194 in the Annex. A number of line and track devices will be shown, such as cable splicer, trolley splicer, bonding terminals, trolley frog, etc., but their main exhibit will be an automatic mine door installed on the railway track immediately back of their booth, also an automatic switch thrower which will be installed at one of the switches leading to the track. Both of these devices will be installed exactly as they would be erected in the mine. The purpose of the automatic mine door is to control the air currents in the ventilating system to guide the air to the working places. The Canton automatic switch thrower is a device which performs every operation connected with opening and closing a switch which can be done by a man. The devices of this company will interest anyone seeking "time tested and proven" automatic labor saving devices.

American Car & Foundry Company of Terre Haute, Indiana, will exhibit a three-ton capacity steel mine car, with three-inch wood floor, 3/16 inch steel sides and 3/16 inch corrugated steel ends. They will also display a standard roller bearing mine car truck, 3 x 7" solid caged rollers, $3\frac{1}{4}$" hot rolled heat treated steel axle, 40 to 50 carbon with 16-inch wheels. The total weight of this truck is 1175 pounds. There will be five other displays of equipment as manufactured by this company which should attract a great deal of attention and interest.

Rand McNally & Company, Chicago, Ill., will exhibit in space No. 11 their Patented Self-Indicating Coupon Books used by Coal Mine Commissaries. The use of the coupon book as a means of keeping store accounts with employes is recognized as the real, practical method for this particular purpose. The demand for them is increasing, because in operation their use is so simple and their value so great in accounting. Their demonstrators will be in attendance to show how and why the coupon book is superior and more economical than other systems. It will be to the interest of officials and representatives of coal mining concerns to investigate their coupon book system and they are cordially invited to attend this demonstration. They will also exhibit maps for various purposes.

The Timken Roller Bearing Company of Canton, Ohio, will exhibit mine car trucks made by two well known manufacturers equipped with Timken bearings. They will also have other data regarding Timken Bearings which will be of particular interest to mine operators.

The United States Forest Service will make an exhibit to stimulate interest in the preservative treatment of mine timbers. Their plan is to show samples of the various preservatives which are known to be effective and practical, and samples of wood treated with them. Sections of treated wood which have remained sound through many years service in mines will be shown as well as sections of untreated timbers which have decayed after a short period of usefulness. With an automatic lantern slide machine, pictures of conditions in mines, wood preserving equipment and various other photographs pertaining to mine timber preservation will be shown, and representatives will be prepared to discuss various types of treating equipment, and will exhibit photographs and drawings of treating plants suitable for mine timber treatment, and will answer questions and furnish information and publications showing how mine timber is practical and economical.

Service Motor Truck Company of Wabash, Indiana, will exhibit in spaces Nos. 7 and 8 a $3\frac{1}{2}$ ton Service truck with dump body, operated by hydraulic hoist. Service trucks are protected against the five shocks and strains to which all motor trucks are subjected by what has been termed the "Service Method of Scientific Cushioning," which means much in the life of motor truck equipment, especially in such use as it would have in the mining industry, where roads are frequently at their worst and conditions of operation particularly difficult.

The Baldwin Locomotive Works, Philadelphia, will exhibit in connection with the Baldwin-Westinghouse Exhibit, spaces Nos. 159 and 160, two steel tired wheels used in mine car and electric driving service. One wheel has a portion cut away exposing cross section of tire, spoke and hub.

Smith Engineering Works of Milwaukee, Wisconsin, will exhibit two models, one of the Telsmith Primary Breaker and one of the Telsmith Reduction Crusher. The latter feature will be an operating model, with a complete oiling system—a perfect machine on a small scale. It is expected that it will be driven with an electric motor and will give interested parties an actual demonstration of a reduction crusher in action. These exhibits will be in booth No. 129.

Larco Wrench & Mfg. Corporation of Chicago, Illinois, will occupy Booth No. 151 and will have on display the Larco pipe and monkey wrenches which are considered the "greatest improvement in wrench construction in fifty years," which should prove of considerable interest to all who visit the Mining Exposition. The Larco Corporation will display these wrenches on a specially constructed pipe rack so arranged as to permit all interested parties to test these wrenches in a most severe manner. This rack will consist of necessary pipe and fittings so connected as to permit the testing of the Larco pipe wrenches in the usual customary manner but because of the superior strength of the wrenches the pipe rack is fitted in a manner to permit of the most severe "side pulls" to demonstrate the unbreakable Larco Frame. They will also display their automatic nut wrenches. These wrenches will be demonstrated on a specially equipped counter containing various sizes of square and hex nuts so as to demonstrate the speed of these wrenches in automatically adjusting to various sizes of nuts. All users of pipe and monkey wrenches will find this exhibit and demonstration well worth their attention.

Macwhyte Company of Kenosha, Wisconsin, will exhibit a very complete line of wire ropes. This exhibit will be placed in specially designed show cases, the s feature being that a clear view is had of the end section of each piece of rope exhibited. These ropes will consist of hoisting and haulage ropes, also extra flexible wire ropes for mining machines. This Company is the sole manufacturer of the celebrated Monarch Mine Car Hitching which is now being used with great success by a very large number of mines. The exhibit will be in charge of Messrs. H. F. Gerling and James A. Boope, who will be very glad to have everyone interested in Macwhyte Company products call at Booth No. 163.

Concordia Electric Company will occupy Booth No. 87 in which they will exhibit "Ceag" electric safety miners' hand-lamps, cap-lamps, together with charging rack, unlocking magnets and other lamp house accessories. They will also have on display other of their products, such as: "Ceag" electric safety lamps for mine superintendents and foremen, their trip-lamps, mine locomotive headlights, safety mule lamps, and watchmen's lamps. All of these products will be fitted with the famous "Ceag" storage battery, which cannot leak or spill, delivering a constant voltage over the entire discharge period, and having a larger capacity higher efficiency, and lower maintenance cost than any other similar battery in the market.

E. J. Longyear Company's exhibit will be of unusual interest to mining men, in Booth No. 29, showing the various phases of mineral exploration and development. As a result of many years of experience, an organization has been brought together and a system of operation developed for every procedure from the initial geological examination of the prospect to its complete equipment as a mine ready for operation. The exhibit covers the principal activities grouped under mineral exploration, diamond drill manufacturing, and shaft sinking. Under mineral exploration, emphasis is placed on diamond drilling and the engineering and geological aspects of this important branch of mining work. As contractors of diamond drilling, this company's representatives will be in their booth ready to explain and illustrate with photographs some of the contracts that have been completed, and will be prepared to make proposals on future work that visitors may have in prospect. The most approved methods of obtaining and preserving samples will be shown. An interesting feature is the demonstration of actual setting of carbon (black diamonds) by one of the company's experienced operators. They will have on exhibition maps, models, and geological and engineering records, illustrating the technical principles involved in scientific direction of exploration and in the appraisal of mineral properties. As manufacturers of diamond core drills and supplies, the company will exhibit one of its smaller drills, a "UG," equipped for operation by either steam or compressed air. Other types of core drills manufactured for every requirement are illustrated by photographs and circulars. The shaft sinking activities will be presented by means of models of some of the shaft sunk by the Longyear Company.

PRESIDENT ASKED TO NAME WESTERN MAN AS JUDGE

THE American Mining Congress has requested President Harding to select a Western man as judge of the U. S. Circuit Court of Appeals, Eighth District, to succeed the late Judge William C. Hook. In a letter to the President, the Secretary of the Mining Congress pointed out the necessity of selecting some one familiar with the extra-lateral right law and irrigation laws. Following is the correspondence between the Mining Congress and the Department of Justice, to which the President referred the matter:

Denver, Colo., Sept. 3, 1921.

Honorable Warren G. Harding,
President of the United States,
Executive Mansion,
Washington, D. C.

My Dear Mr. President:

Will you permit me to express the desire of the mining men of the West that in the selection of a successor to the late Judge William C. Hook, of the Eighth District of the United States Circuit Court of Appeals that a man shall be selected who is familiar with the peculiar problems of the Rocky Mountain states?

This is particularly desired in order that the cases coming before this court may have the advantage of consideration by a man who is familiar in a practical way with the two systems of law which do not prevail elsewhere than in the Rocky Mountain region, viz., the extra-lateral right law, permitting the following of a vein of ore upon its dip outside the boundaries of the surface lines, and the irrigation law, which gives to the users of water for beneficial purposes the right by prior appropriation to divert the water from its accustomed channels in violation of the doctrine of riparian rights, which is of almost universal application outside the arid land states.

The American Mining Congress has no candidates for this or any other public office, but it does urge that a Western man shall be selected because of the reasons above outlined.

Trusting that you will give this matter careful consideration and thanking you therefor, we are

Very respectfully,

THE AMERICAN MINING CONGRESS.
By J. F. Callbreath, Sec'y.

September 13, 1921.

Mr. J. F. Callbreath, Secretary,
The American Mining Congress,
Denver, Colorado.

Dear Sir:

The Attorney General directs me to advise you that he has received, by reference of the President, your letter of the 3d instant, expressing the desire of the mining men of the West that in the selection of a successor to the late Judge William C. Hook, of the Eighth District of the United States Circuit Court of Appeals, that a man shall be selected who is familiar with the peculiar problems of the Rocky Mountain States, and to say that the same will be filed for consideration at the proper time.

Respectfully,

W. FRANK GIBBS,
Private Sec'y and Ass't to
the Attorney General.

COAL LEASING AMENDMENT

REGULATIONS governing coal mining leases, permits and licenses under the Leasing Act have been amended by the following addition to the text of Section 8, effective August 10:

"Provided, that in case of lease for a small area where the investment to be made is less than $10,000, the lessee shall furnish one bond to cover both the investment and compliance with the terms of the lease, such bond to be in half the amount of the investment to be made, but in no case shall be less than $1,000."

HANDKERCHIEFS TO YIELD TO RESPIRATORS

AN INVESTIGATION of the various types of respirators used by workers in numerous industries in preventing the inhalation of injurious dusts will be undertaken at the Pittsburgh experiment station of the United States Bureau of Mines.

Stone dusts and metal dusts bseathed by miners, stone cutters and metal polishers have been the cause of much pulmonary disease, incapacitating many workers and at times resulting in early deaths. Investigators have learned that the finest particles of dust, of a size far too small to be seen by the unaided eye, are the ones that lodge in the lungs and do most damage. At present little is known of the merits of the different filtes used for respirators, and workmen often prefer to protect themselves with a towel or handkerchief tied around the face.

The tests will be conducted by S. H. Katz assistant physical chemist, and L. J. Trostel junior chemist, under the direction of A. C Fieldner, supervising chemist.

SHALE RESOURCES CONSTITUTE POTENTIAL RESERVE

IF THE AMERICAN petroleum supply ever falls short of the domestic demand, and foreign oils cannot be obtained in sufficient quantities at reasonable prices, we can depend upon our oil shales to meet the emergency. This is the studied conclusion of the United States Bureau of Mines.

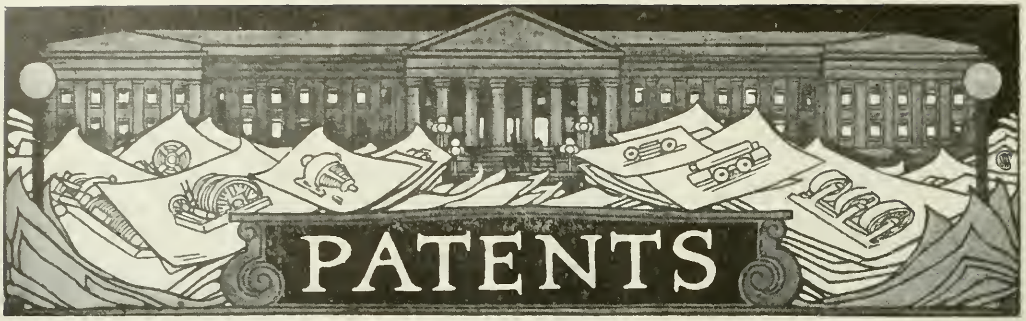
An analysis of the oil shale situation, particularly from the economic angle, has been made by M. J. Gavin, H. H. Hill and W. E. Perdew, of the Bureau of Mines. They give special consideration to the western states, where shale beds are thickest and richest. They agree with prior findings of the Geological Survey that these states contain enormous quantities of shales which can be made to yield hydrocarbon oils to a much greater extent than we can hope to obtain from our oil wells, and that the shales thus constitute a tremendous potential reserve.

PRODUCTION AND SALES OF LIME, 1919-1920

PRACTICALLY the same amount of lime was produced and sold in the United States in 1919 and 1920, according to final calculations of the Geological Survey. The value of the 1920 output, however, was more than $2,000,000 in excess of that of the year preceding. The increase in quantity was 7.2 percent and the increase in value was 27.5 percent, the average value in 1920 being $10.52 per ton as compared with $8.84 per ton in 1919. Comparative figures for the two years are shown in the accompanying table.

Lime Production and Sales, 1919-1920

Use	1919		1920	
	Quantity (short tons)	Value	Quantity (short tons)	Value
Building	1,191,434	$11,484,318	1,305,412	$15,269,683
Agriculture	438,632	3,345,039	351,851	3,096,705
Chemical:				
Paper mills	335,813	2,836,347	365,897	3,844,084
Glass works	44,618	336,020	54,747	551,945
Sugar factories	13,111	163,526	14,145	175,798
Tanneries	59,978	580,022	61,162	668,999
Metallurgy	295,622	2,152,554	344,921	2,836,474
Other chemical	861,022	7,695,818	1,000,550	10,304,049
Total chemical	1,610,164	13,664,287	1,841,422	18,381,349
Total	3,330,347	29,443,553	3,570,141	37,543,840
Hydrated lime (included in total)	777,408	7,061,146	853,116	9,287,562



CONDUCTED BY JOHN BOYLE, JR.

1,382,001—*S. J. Cruly*, Miami, Ariz,. June 21, 1921.
SHOVELING MACHINE.

1,382,275—*W. Deister*, Fort Wayne, Indiana, June 21, 1921. Assigned to Deister Machine Co.

ORE CONCENTRATOR of the type which are differentially reciprocated and transversely inclined downwardly in operating position. A sudden drop of the concentrates into a channel over a non-submerged edge of the riffle immediately above the channel is undesirable since the minerals in the channel are thereby continuously agitated and more or less of them are continuously washed out of the channels and over the riffles below in succession down the slope of the deck, whereas it is desirable to retain in the channels all minerals caught therein and to guide them under the influence of the reciprocating movement of the table toward the concentrates discharge end of the deck. The width of the riffles, the sloping portions of their top surfaces and the submerged upper edges of the lower sides or walls of the riffles all contribute to direct the water contained in the pulp in practically a straight line or sheet over the riffle tops and thereby substantially eliminate all excavating action of the water on the materials in the channels.

1,382,276—*E. & W. F. Deister*, Fort Wayne, Indiana, June 21, 1921. Assigned to Deister Machine Co.

SUPPORTING MECHANISM FOR ORE CONCENTRATORS by which any desired transverse inclination of the table may be accomplished, and comprising a plurality of wedge adapted to engage one side of the table, and means for simultaneously operating the same to control the inclination of the table.

1,382,337—*G. C. Bellis*, Butler, Pa., June 21, 1921.

METHOD OF CLEANING OIL WELLS, comprising pouring caustic alkali into the well, permitting it to remain there to loosen the deposits formed on the walls thereof and then pumping out the same.

1,382,602—*A. H. Neilson*, Tulsa, Okla., June 21 ,1921.

MULTIPLE SUCKER ROD SOCKET, comprising a barrel with a downwardly tapering bore, slips in said bore, and means loosely holding said slips together, enabling a greater separation thereof at the top than elsewhere, when moved upwardly in said bore.

1,383,309—*F. E. Johnson*, Salt Lake City, Utah, July 5, 1921. Assigned to American Manganese Steel Co.

MINE CAR WHEEL of the type that are made of alloyed metal, preferably of manganese steel, and which wheels are provided with bushings forced or driven into the hubs for free rotation on the axles, the bushings having a special formation for co-operation with a ring or the like whereby the wheels may be readily applied to or removed from the cars. This construction serves as a means for not only removably securing the wheels to the axles of the housings, but also as a leak-tight joint preventing the escape of any lubricant or oil of any sort from the interior of the housing.

1.383,370—*G. J. Bancroft*, Denver, Colo., July 5, 1921.

PROCESS OF SPLITTING MICA, consisting in heating water soaked material in a closed chamber until the desired pressure is attained and opening the container to suddenly release said pressure.

1,383,380—*S. L. Boggs*, Ivanhoe, Va., July 5, 1921.

SLIME PUMP. The present invention deals with a pump, or conveyor, for moving mixtures of ore or gangue and water. At present either screw conveyors, or centrifugal pumps are used for this purpose.

1,383,881—*J. I. Thomas*, Garfield, Utah, July 5, 1921.

FLOTATION APPARATUS, comprising a gaseous fluid distributor resembling a rotatable propellor, the blade-like body having a porous wall through which the fluid escapes, thereby exerting an impelling action on the distributor to cause it to rotate.

1,384,236—*A. J. Chopin*, Paris, France, July 12, 1921.

COAL CUTTING MACHINE, involving the application to coal cutting of a compressed air hammer and means of supporting the same in adjusted position.

1,384,404—*T. E. Pray*, Chicago, Ill., July 12, 1921. Assigned to Goodman Manufacturing Co.

MINING MACHINE of the cutter chain type, comprising a construction for mounting the cutter bar on the machine frame so as to avoid rotation thereof from one side of the machine to the other, and also to afford tilting of the cutter bar out of its normal horizontal plane so as to follow rolling or uneven floor and to maintain the cutter bar at the proper height.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of THE MINING CONGRESS JOURNAL, published monthly at Washington, D. C., for October, 1921.

City of Washington, }ss.:
District of Columbia,}

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared E. Russell Coombes, who, having been duly sworn according to law, deposes and says that she is the business manager of THE MINING CONGRESS JOURNAL, and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

Name of Publisher—The American Mining Congress.

Postoffice address—Washington, D. C.

Officers:

W. J. Loring, President, San Francisco, Calif.

Daniel B. Wentz, First Vice-President, Philadelphia, Pa.

E. L. Doheny, Second Vice-President, Los Angeles, Calif.

Thomas T. Brewster, Third Vice-President, St. Louis, Mo.

J. F. Callbreath, Secretary.

Editor—T. R. Moss.

Business Manager—E. Russell Coombes.

2. That the owners are (give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 percent or more of the total amount of stock): The American Mining Congress—a corporation, not for profit. No stockholders.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are (if there are none, so state): None.

E. RUSSELL COOMBES,
Business Manager.

Sworn to and subscribed before me this 23rd day of September, 1921.

(Seal.) THOMAS C. WILLIS.

(My commission expires February 20, 1922.)

The

MINING CONGRESS JOURNAL

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HEROES

NOVEMBER 11 marks the end of the third year of peace. It is eminently fitting upon that day that this great nation should commemorate the death of its own unknown hero. On that day the reverence and gratitude of the entire nation will be expressed for the supreme sacrifice made in a cause so infinite.

On that day an international conference will be assembled here and dedicated to the proposition that the continued military and naval competition of nations is a provocation of war rather than an insurance of peace, and constitutes a burden of cost upon the people of the world which no longer can be borne. That our unknown heroes and those of every other nation may not have died in vain, let us consecrate ourselves to this proposition: the nations of the conference thus consecrated will in harmony agree upon a solution that for all time will free the people of the world from the ever-increasing burden of war, and thereby permit a resumption of the normal pursuits of peace upon which the progress of civilization depends.

But, with our tribute to the dead, let us also pay homage to those who faced death and might have died unknown on the same field of battle, to those who have returned to suffer a living death. How better may we consecrate the life of the hero unknown than to re-dedicate ourselves to the labor of love in assuaging the pain of these heroes and of repairing their losses? May the heart of the nation open wide its portals to those who are today bearing a sacrifice no less great than that of the unknown!

MUZZLE THE PESSIMISTS

OPTIMISM PREVAILS throughout the country. Business sees hope for revival. Labor is hopeful and confident. Capital sees investments safeguarded. Government sees improvement everywhere. These conditions are coming in spite of the influences which have been causing uncertainty and fear. The disrupting influences which have been responsible for much of the instability, dissatisfaction, and unrest are growing weaker and less dangerous.

For example, there's the politician who has stood in the way of constructive legislation which will stimulate business, revive industry, stabilize exchange, create employment, and encourage investment, when he knew that delay would depreciate almost every kind of property in the country and otherwise prolong the return to normalcy. Of all whose aims remain self-centered while the country is passing through this period of depression and retrenchment, politicians who exploit existing post-war conditions for political advantage, and office-holders—representatives of the people—who work for class legislation and local gain, and attempt to delay or defeat policies and measures which would benefit the entire country, merely because of political considerations, are the most contemptible. Such leaders should be defeated at the polls.

Then there's the class of unstable individuals, who have no money to invest or constructive ideas to offer, who make no contribution to the industrial wealth of the nation, but who spend their time agitating and creating factional disturbances; whose efforts are directed against private ownership and management in an attempt to establish government ownership and control of all public utilities and natural resource industries; and the effect of their efforts has been to discourage investment and to prevent the untrammelled development of these industries. Then there are certain labor groups whose purposes are clannish and whose efforts are devoted to their own selfish interests regardless of the effect which the accomplishment of their aims might have upon the country and the people as a whole. Their viewpoint is narrowed to the program of getting everything possible for themselves "while the getting is good" irrespective of the hardship, burden, or damage imposed upon others. All of these are rapidly becoming impotent, since the latent energy and aggressive spirit of determined and loyal American citizens have been aroused.

Optimism must be restored, and confidence must prevail instead of uncertainty and distrust, if the country is to be rehabilitated and business is to be given an impetus toward complete recovery and normal activity; and this end is being accomplished by the sincere efforts and constructive policies of men who are doing things in the business and industrial world and who represent the true ideals of America's thought and action.

THE RAILROAD PROBLEM

THE RAILROAD TIE-UP has been called off but the railroad problem has not been settled. The railroad problem will not be settled until operating costs have been reduced to approximately that level which is to be the future price average on all commodities, labor included.

Samuel Gompers says "the ultimate issues between the railroads and the employes remain to be settled." To this extent we believe he is right. He further stated, "the only true solution of the problem of the relationship between railroad employers and railroad workers lies in direct negotiations between the two groups. Negotiations and joint agreement minus the artificial machinery of government boards will bring railroad operation to a practical and natural basis."

In the latter statement we believe Mr. Gompers is partially right, but he appears to have left out of consideration the more important factor of the general public interest. The railroad question cannot be settled, will not be settled, until it shall be able to render a service to the great consuming public at a price commensurate with the earning power of that consuming public.

To say that only the railroads and their employes are interested and that these parties have a right to dispose of the public interest independently is in violation of the principle that transportation is charged with a public interest and that transportation companies are public utilities, which is the only principle upon which Interstate Commerce Commissions and railroad labor boards have any right to exist.

If this principle is acknowledged we must then assume that the railroad problem can only be settled upon a basis which will permit public business to go on at a price level commensurate with other lines of productive energy.

The future level of prices will be determined upon a basis having relation to the amount of gold which forms the basis of the credit of this nation and of the world. No other basis can be permanent.

If the United States could hold its present gold supply and if other nations of the world could secure a proportionately similar amount the world's business could go on upon a higher price level which would justify the present wages of railroad employes and the present transportation charges to the public. All economists agree that until credit conditions abroad can be improved the possibilities of foreign trade are limited. The productive power of the United States is considerably in excess of possible home consumption. To keep all the wheels of industry moving it is necessary to dispose of a percentage of our total production in foreign markets. The present depreciated exchange in foreign countries is prohibitive of exports and an open door for imports which will, to that extent, displace American labor.

The higher our price levels here, the lower the gold reserves of foreign countries, the greater the handicap of depreciated exchange rates, the more difficult it will be for American business to return to normal. The first step toward relief from this situation is to reduce costs of railroad operation and the transportation costs to the public which vitally affects the living cost of all.

Following a proper solution of this question the cost of producing coal must be radically reduced. In practically all other lines losses have been and are being taken. In these lines, transportation and coal, the power which prevents a return to normal conditions which is essential to the prosperity of the American people is organized labor. The future profits of capital must be less and the wages of railroad labor must come down to a common wage earning level which in the end will be governed by the nation's permanent gold supply. The first step in that process is that railroads shall reduce rates, which cannot be done except its labor shall reduce its wages. The resolution adopted by the Twenty-fourth Annual Convention of the American Mining Congress at Chicago is to be commended. It will be found upon another page of this issue of the MINING CONGRESS JOURNAL.

Let labor and railroad capital adjust their differences upon a basis which will permit business to assume normal conditions. No arbitrary solution based on the principle that the transportation-paying public is not the principal party in interest can be permanent.

POINTS OF CONTACT WITH MR. PEABODY

AMONG THE LEADERS in the coal industry few, if any, are listened to by the coal trade with more attention than Francis S. Peabody of Chicago. At the recent convention of the American Mining Congress in Chicago, Mr. Peabody gave a review of the causes leading up to the heatless days and lightless nights and pointed out most clearly that governmental interferences was entirely responsible for the coal famine, the runaway coal market and the misery and suffering which were thereby entailed. He fixed the blame quite definitely upon the then Secretary of War Baker and the then chairman of the Federal Trade Commission Colver, and in the following language called attention to another Cabinet member:

"How different has been the attitude of Herbert Hoover as a government official. Every man engaged in the industry of mining, whether metal or coal, is proud of Herbert Hoover—not only proud of his ability as a mining engineer, but proud of his clean, sound, constructive thinking of the problems that so beset the mining industry."

Mr. Peabody while regarding governmental control as the most serious problem, discussed some of the minor problems as follows:

"There are enough miners in the mining and coal mining industry of the United States if the mines were worked 250 days per annum, to produce twice the amount of coal that the United States, including its exports, could use. What a problem, and who can solve it?—How to support these men, in idleness half the time because they must earn during the period of their work sufficient to live during these idle days?

* * *

"During periods of great demand the non-union operators pay premiums to take away from the union mines the labor that is so necessary. During bad times, when there is no demand, these same non-union operators force a reduction in wages and produce coal so much cheaper than those paying union wages can produce coal that their mines run full, while the union mines run less than 30 percent. Can this problem be solved? I do not know. Certainly not by government control of the wages or prices at which coal is sold."

Mr. Peabody ended his address as follows:

"I believe a commission, as much as I abhor the name, and as much as I abhor the usual results of the findings of commissions, should be appointed by this Congress to study from the broadest standpoint, the saving and conservation of the mineral resources of the country and the saving and conservation of the lives of men employed in those industries; to make clear, concise recommendations for the passage of federal and state laws that will result in the saving for the future generations of the fuel of the country and saving for the present generations the lives of the men employed in the industry."

The American Mining Congress is fully alive to the problems so tersely pointed out by Mr. Peabody. Its first great effort was for the creation of a Bureau of Mines, its principal purpose being to bring about better safety methods in mining. As a result of that agitation and the education of the public conscience the loss of life in coal mining operations has decreased from 6.78 men killed per million tons of coal produced in 1907 to 3.39 men killed per million tons of coal produced in 1920. The record is one in which the American Mining Congress feels great pride.

During all of those years this organization has urged that such conditions should be created in the coal industry as would make more uniform the operation of the mines, which would insure a steady and reasonable profit to the operators and which, by eliminating the waste to which Mr. Peabody calls attention, would provide to the consumer the cheapest coal which is possible with a fair rate of wages to the miner. It has continuously urged the vast importance of stabilizing the coal industry for the benefit of the most largely interested party—the consumer of coal. It has continuously held to the belief that cheap coal is the basis of our industrial prosperity and that practically every person in the United States, without regard to his calling, has a personal and direct interest in the proper functioning of the coal mining industry. To the extent of its financial ability it will gladly comply with Mr. Peabody's suggestion to create a committee to do further work looking to the stabilizing of the coal mining industry.

THE CHECK-OFF

WE BELIEVE that none of the leaders of the coal industry is in better standing with organized labor than Harry N. Taylor, vice-president of the Central Coal & Coke Company, Kansas City, Mo. Mr. Taylor is a broad-minded, sympathetic, public spirited citizen who always gives full consideration to the labor side of every industrial controversy. We believe that the rank and file of the membership of the United Mine Workers of America would choose him as an arbiter of an industrial dispute more universally than any other employer of mine labor in this country. Mr. Taylor's long experience as a coal operator and his unique standing with union men gives special weight to his views.

At the recent Chicago convention of the American Mining Congress Mr. Taylor reviewed the growth of the United Mine Workers' organization, pointing out the advantages and disadvantages, and giving particular attention to the question of the check-off. Mr. Taylor said "personally, I have the highest regard for union labor fairly conducted. I know from personal observation that it has accomplished much for the wage earner. In many instances it has brought him comfort and contentment that otherwise would not have been secured; but the miners' organization must be purged of the radical and revolutionary leadership that has sprung up in many districts before it can hope to regain its standing in public esteem."

Concerning the check-off Mr. Taylor spoke as follows:

"The abuse of the check-off system that is in vogue and a part of the organized labor contract is even more serious to public welfare than the radical, lawless leader, because it is by this means that he is able to accomplish his end. In my opinion, it is the check-off system which is responsible for the growth of radicalism in the miners' organizations. In the early days of the contract, the check-off was a comparatively harmless thing. It was used only to check off nominal dues and sick benefits. Today its purpose is abused until it is a menace to public welfare. It is used to check off a large percentage of the miners' wage and the vast sums obtained are used for purposes far removed from the purpose intended in the origina contract. The huge sums realized from the check-off have been expended to carry on a lawless war condition in more than one of the non-union coal producing states. These funds have been diverted in another state and have been used for the defense of the I. W. W.'s under arrest for offenses against the laws of the nation. It was the vast sum created by the check-off which made conceivable the nation-wide strike of November, 1918, when the people were threatened with freezing in an effort on the part of the miners to enforce their demands.

"The check-off enslaves the rank and file of the miners' organization. The individual miner's earnings are taken from his pay envelope in the proportion levied upon him, and the funds are often used for radical propaganda in which he may not personally be interested, and to which he is frequently opposed.

"Although the contract distinctly provides that all the men shall remain at work while disputes are being adjusted, this clause in the contract is almost universally disregarded. The pendulum has swung back until now the strike is the weapon used almost as freely as it was prior to 1898 to enforce the settlement of disputes."

Mr. Taylor further called attention to the fact that the advances in wages paid to coal miners during the war pyramided the enormous sum of $1,695,831,160.40 and that the increased cost of coal under the contract added to the wage advance ordered by the President's commission in 1920 will add the enormous sum of $1,099,-450,000.00 to the cost of coal for the year 1921, and will continue as a yearly charge so long as the present contract remains in force unadjusted.

* * *

"Although labor is approximately 85 percent of the cost of production, the miners have steadfastly refused to readjust the present contract, and have served notice that they do not intend to accept a reduction even at the expiration of the same, April 1, 1922, but will ask for a still further advance.

"Business must return to normalcy, but this cannot be done so long as a basic industry like coal remains on a war-time basis. The labor leaders must know their failure to readjust and meet present conditions has done more to prolong the depression and cause endless distress among working people than any other element."

Mr. Taylor closes his address with the following statement:

"If the miners continue their refusal to make a readjustment of an abnormal wage scale and on April 1st call a nation-wide strike, the operators must assume a public duty of standing for the public rights, and the well-thinking men of this country must stand behind them in this battle for the good of American industry and American freedom against a labor autocracy."

FOREIGN TRADE

WE ARE MET at every hand with the suggestion that the bankrupt nations of Europe cannot pay us their obligations unless they pay us in merchandise. This would be alarming if true. Fortunately it is not true.

Europe owns today enough bonds and similar obligations of South American countries, governmental and industrial, to more than pay the European indebtedness to the United States. Do not think for a moment that European countries contemplate offsetting their indebtedness to the United States in this manner. They want to continue to finance South America. They want to continue to hold South American trade. In this they are merely wise.

This country for many years has tried to get a foothold in South American trade and has conspicuously failed for two reasons. Our business methods are not leisurely and painstaking enough to adapt themselves to the business methods of South American countries. This is the psychological reason. The materialistic reason is that South America has been financed by Europe.

To have our own international bankers tell us in the face of this that the only way we can develop foreign trade is to permit free importation of European goods is a method of blinding the public to a situation with which the bankers themselves must be entirely familiar.

POINTS OF DIFFERENCE WITH MR. PEABODY

WE HAVE in another editorial called attention to those parts of Mr. Peabody's able address at the Chicago convention to which we agree, and now desire to call attention to a point of disagreement. Let us again quote Mr. Peabody:

"Let us study for a minute the Sherman law and the Clayton bill. Let us see what effect these laws have upon our industry. They forbid combinations in restraint of trade, meaning thereby that men in a similar line of industry cannot get together and agree upon prices, cannot get together and agree upon the quantity of their production. How does this affect our industry? I do not believe it affects it in the slightest. There are 7,000 coal operators scattered throughout the United States, from Virginia and Maryland to the state of Washington, mining coal under dissimilar conditions, not only as to physical problems of mining, but as to the quality and use of the coal produced—coal veins running from 24 inches to 50 feet in thickness, and with ash running from 2 percent up to 25 percent.

"It seems incredible that a condition could exist whereby these men could even think of getting together on prices or production. But let us assume that it would be possible. What would be the result? During periods of great demand, prices would go up; not because of any combination, but because the demand is greater than the supply. During periods of depression prices would go down, because the demand was less than the supply.

"To prove this, let me call attention to the provisions in the Clayton bill exempting farmers' organizations from the penalties of the bill, exempting labor organizations from the penalties of the bill—especially providing that labor is not a commodity, therefore no combination can be formed in restraint of trade. What is the result? Notwithstanding the farmer is allowed to combine, is allowed to hold back shipments of corn, etc., is allowed to combine on the price at which he shall sell his beef, or his corn, or his vegetables, or his grapes. Today corn is selling at 16 cents a bushel in Nebraska. Public utilities, villages and farmers are burning corn instead of coal. Do you think for one minute that if they could have made a combination that would hold, we would not be paying $1.00 or $1.50 a bushel for that same corn? But no matter how hard they try to combine they cannot get away from the inexorable law of supply and demand, and if there is more corn than can be used, the price must go down.

"Labor is the same. The unions are holding for $8.00, $9.00 and $10.00 a day for their men. With what result? Half of their men are out of work today. Everything from the beginning of the world has been based upon the inevitable laws of supply and demand; the human mind can devise no method by which these laws can be supplanted."

Mr. Peabody does not give the reasons for the many prosecutions for violation of the Sherman Anti-Trust law now occupying various federal courts of the country. It must be assumed that these prosecutions would not have been commenced except upon a more or less general belief that the law had been violated. Nor have we any estimate of business activities suppressed by the uncertainty caused by these prosecutions in the business mind of the nation.

It is true, as Mr. Peabody says, that the human mind can devise no method by which the laws of supply and demand can be supplanted, and it is equally true that it would be utterly impossible to bring into one combination the seven thousand competitive units now engaged in the production of coal. But we believe it to be also true that the lifting of that governmental interference with the law of supply and demand—the Sherman Anti-Trust law—to the extent that it prohibits combinations which would serve the public good, would serve to stabilize prices and production, conserve the coal reserves and provide better safety requirements and better living conditions for the men employed in mining. We believe it would also make possible a reasonable profit to the operator and more continuous employment to the miner and avoid some of the waste occasioned by the idleness of 700,000 men one-third of each year and the waste of the earning power of the two billion dollars of capital which is idle one-third of the year, both of which (the support of the men and the interest upon the capital) must be added to the cost of coal to the consumer. An interest charge of 4 percent and a daily wage of $5 amounts to a charge of 86 cents per ton upon 500 million tons of coal, which is the average annual production of the country. Money engaged in a hazardous enterprise cannot be secured at 4 percent interest; skilled miners cannot be hired for $5 per day.

Whether a combination in coal is possible or not, the fact remains that the Sherman law not only forbids such combination but court decisions at this time forbid even the assembling and distribution of statistical information of current facts concerning market conditions. In this behalf the American Mining Congress is in line with the thought of many other persons in the coal industry and ably voiced by another prominent leader of the coal industry, Mr. Thomas H. Watkins, in his remarkably comprehensive address delivered at the Chicago convention. Mr. Watkins says:

"In connection with the activities of Congress, it appears to me that the American Mining Congress should adopt a definite program leading up to a recommendation for either the repealing of, or amendment to, the Sherman Anti-Trust law, which would permit reasonable trade agreements that would tend to stabilize prices and production. The condition brought about by over-production and unbridled competition is as detrimental and vicious in its effects as the extremes of high prices in a panicky coal market. It has been well said that it is impossible to create a combination in the bituminous coal industry, but it is possible for the leaders of this industry, if permitted to get together, to formulate policies that would tend towards conservation of our coal resources, toward stability of production, towards wholesome treatment of labor, towards satisfactory treatment of the consumers, none of which can be done efficiently today owing to the prohibition under our laws of even discussing among ourselves agreements as to production or prices."

AMERICAN VALUATION

A RESOLUTION favoring the principle of American valuation as a necessary protection for the industries to which the mining industry delivers its products was passed at the recent convention of the American Mining Congress.

This resolution is a logical endorsement of a necessary change. False propaganda would have us believe that American valuation means a pyramiding of values when the fact is that the present foreign valuation for import purposes is a fictitious valuation, low in most cases. Under the present system valuation for import purposes has no relation to the invoice price. The invoice is inviolate as between buyer and seller. The valuation is a "declared" or stated value for the purpose of fixing duty. On a recent purchase of clothes from London the invoice was received and paid. When the clothing arrived it was accompanied by a statement for duty due. The declared price on the basis of which duty was fixed was many dollars below the invoice price. This is the condition which will be remedied by American valuation.

STATE TAXATION OF MINES

STATE taxation of mines proved to be a topic of vital interest to the delegates to the national Mine Tax Conference held October 17–22, in conjunction with the twenty-fourth annual convention of the American Mining Congress. Many phases of the question were developed. Careful analysis of various state tax laws showed that in their enactment and administration, the legislatures and tax commissions of the different states have not followed uniform, scientific, or economic principles. In some states a differentiation is made between productive and non-productive mines and mineral lands; in others, mines, including undeveloped properties, are subject to an ad valorem tax based on the value of their mineral content, and in addition are required to pay a tax on production; in others, a production or severance tax is levied in lieu of the general property and other taxes, while in many only the ad valorem basis is used. Certain states have adopted such a discriminatory policy with respect to natural resources that these assets are being greatly diminished and in many cases totally destroyed by excessive valuations and exorbitant tax rates.

The development of the mineral resources of the country has brought vast amounts of capital into the mining states, has added thousands of people to their populations, has caused the building of railroads and thus has opened up vast agricultural regions and other potential resources, has furnished sources of employment for millions of citizens, and has enabled permanent improvements to be made which have added materially to the taxable wealth of the country.

Any state which levies a tax which retards or precludes the development and full utilization of the country's natural resources is not only defeating the principle of conservation but is causing a waste of its assets and potential taxable wealth from which a future constant revenue might be derived.

TARIFF, WHEN?

IN THE REFLECTION of editorials which the country gets from New York papers there is an impression that the political leaders in Congress feel they have a red-hot stove in their hands in the Fordney tariff bill and would like to set it down some place until it has time to cool off. This attitude is the conscious and unconscious reflection of the thought of the international bankers who are so intent on furthering foreign trade relations, even at the expense of internal prosperity, that their propaganda sometimes misleads the public in the relative importance of a four billion dollar foreign trade balance and a sixty-five billion dollar home market.

The Fordney tariff bill recognizes the necessity for protecting American mineral industries, and its passage will mean prosperity for these industries, both through their protection and through the resumption of activity in other protected industries to which the mining industry furnishes its products.

The tariff bill involves detailed consideration of intricate business problems and as rapidly as this can be completed with intelligent investigation the tariff issues will be settled and the tariff bill passed.

The political leaders are not afraid of the tariff issue. The majority of them are seasoned legislators who have passed tariff bills before and they know that a measure which spells internal prosperity will have few long-time enemies.

PERSHING PRAISES STEEL MAN'S PATRIOTIC SERVICES

THE part played by steel in the recent war was, of course, recognized and appreciated all along, but the public has never been made fully aware of the work done by certain individuals in making possible the use of the nation's resources. One of the big business men instrumental in winning the war was James B. Bonner, and the mining industry will be interested in the following acknowledgment of his services which was printed in the *Army and Navy Register* of October 22:

"Not all of those civilians who served with distinction and usefulness in an administrative or advisory capacity during the World War received decorations and citations and it is only in the nature of things that some of those most deserving of special commendation failed of recognition. Of such is Mr. James B. Bonner, one of the prominent 'steel men' of the country for many years, who served during the war as chairman of the committee on steel distribution of the American Iron and Steel Institute, in which capacity he successfully conducted the agencies which facilitated negotiations between the government departments that required the material and the firms that manufactured steel and iron. At that time the congestion of orders was prodigious, entirely beyond the ordinary functions of departmental administration to regulate and control and impossible of unaided adjustment at the sources of supply. It therefore became necessary to allot the material so as to obtain the maximum benefit of domestic facilities of production with the least delay. The difficulties of the task were enormous and too little has been known of the achievement, outside of the scenes of this important war activity. Some comprehension of the volume of business may be gained from the fact that the amount of material thus turned out and delivered to the various government branches requiring it equalled about 17,000,000 tons. Recently General Pershing, learning of this situation and the part which Mr. Bonner played in the proceeding and also ascertaining that no citation, such as had been freely bestowed in many other directions, had been issued in recognition of this important service, sent a copy of his report to Mr. Bonner with this inscription: *'To Mr. James B. Bonner, whose patriotic service as a representative in Washington of the steel and iron industries of our country deserves the praise of all his countrymen. John J. Pershing.'*"

COPPER STOCK ASSIMILATION

CONTINUATION of present rates of copper production and consumption in the United States will result in a surplus at the end of the year of about 650,000,000 pounds, which is only 250,000,000 pounds above the quantity ordinarily in the course of refinement. This prediction has been based by close students of the situation upon reports of the Geological Survey giving amount of stocks on January 1 and September 1. Stocks at the first of the year were given as 659 million pounds, and the unrefined metal at the smelters as 465 millions, totaling 1,124,000,000 pounds. The Survey estimated that this figure was reduced by September to 810 million pounds. Sales for September were estimated at 100 million pounds, and production at 40 millions.

CONVENTION ATTENDANCE AND INTEREST BREAK ALL RECORDS

TWENTY-FIVE HUNDRED mining operators, foremen, superintendents, scientists, public officials and manufacturers of mining machinery and supplies attended the Twenty-fourth Annual Convention of the American Mining Congress and National Exposition of Mines, at the Coliseum and the Congress Hotel, Chicago, Oct. 17-22.

The convention was not only the largest, but the most representative the mining industry of America ever held. The National Exposition of Mines was in all respects successful and will probably be held annually hereafter. A majority of the exhibitors held a meeting in Chicago and voted unanimously to exhibit next year irrespective of the city in which the exposition may be held.

The solidarity of the mining industry was demonstrated throughout the week, and marked recognition of this solidarity was shown by President Harding and Secretary of Commerce Hoover, each of whom requested the entire industry, through the Mining Congress, to lend its aid in settling the problems of one particular branch of the industry. Similar recognition was extended by some of the leading coal operators, who told the convention that they knew they would be understood by the metal miners and that they desired to work in co-operation with them.

Convention speakers included "big men" from the Western metal mining districts, the iron region, the oil fields and the coal industry. Metal mining in all its phases—including economics, freight rates, labor problems, exchange—was a theme which ran throughout the program. In addition, there were special sessions devoted entirely to metal mining, as well as coal.

W. J. Loring, under whose leadership the American Mining Congress has had its most successful year, was re-elected president unanimously. J. F. Callbreath was re-elected secretary. Daniel B. Wentz, first vice president, E. L. Doheny, second vice president, and Thomas T. Brewster, third vice president, were re-elected unanimously. Bulkeley Wells of Denver and E. L. Doheny of Los Angeles were re-elected directors for three years, and Sidney J. Jennings, of the U. S. Smelting and Refining Company, and H. W. Seaman, of the Trojan gold mining company, were elected directors for three years, succeeding Harry L. Day of Wallace, Idaho, and E. P. Mathewson of New York. The Executive Committee for the coming year will be composed of President Loring, Sidney J. Jennings and Robert Linton.

Of particular interest to the Western metal mining industry was the action taken by the Mining Congress in the adoption of resolutions. The resolutions, each dealing with some particular subject, expressed the opinion and in some cases forecasted the action of the Mining Congress. The substance of some of the most important resolutions follows:

Summary of Resolutions.

Commending the activities of Senator Tasker L. Oddie in support of the gold standard and favoring a conference of the United States, France and Great Britain to devise means for remedying the chaotic exchange situation; resolution introduced by President Loring favoring a Department of Mines; opposing immediate general revision of the metal mining laws and favoring appointment of a committee to ascertain the wishes of the mining industry; authorizing the appointment of a committee to study state mining laws; authorizing the Tax Division to prepare and present information tending to prevent discrimination and inequitable taxation; favoring reorganization of the government of Alaska and making its administration local and responsible to the President; favoring a program of a sound business education to the end that capital and labor may understand one another and business be re-

stored; urging government authorities to order abolition of the last freight rate increase and the last wage increase; urging speedy passage of the Fordney tariff bill; favoring American valuation; asking additional war minerals relief legislation; urging the government to complete at once investigations necessary to development of the irrigation and power potentialities of the Colorado River; appointing the President and the Secretary of the American Mining Congress ef-officio members of a committee hereafter to be appointed to confer with the Department of Commerce, at Secretary Hoover's request, for promotion of the mining industry; favoring amendment of the Sherman Anti-Trust Law so as to permit mining companies to exchange necessary information.

Tuesday

At the opening session, Tuesday morning, Oct. 18, H. C. Adams, Illinois vice president of the American Mining Congress, presided as temporary chairman. and the large Coliseum Annex was crowded when he presented President W. J. Loring. At this session President Loring delivered his annual address. Chairman Francis S. Peabody of the Illinois Committee on Arrangements spoke on "The Problems of the Mining Industry" and Edwin Ludlow, president of the American Institute of Mining and Metallurgical Engineers, spoke on "Coal and Labor." The secretary read the letter from President Harding asking the assistance of the Mining Congress in solving coal problems, and the States announced their members on the Resolutions Committee.

At the second convention session, held Tuesday night, Governor J. A. O. Preus of Minnesota spoke on "Government and Industry," describing in detail the workings of the Nonpartizan League. Falcon Joslin of Seattle spoke on "The Needs of Alaska."

Wednesday

President C. H. Markham of the Illinois Central Railroad delivered an address on "The Problems of the Railroads." George Otis Smith, director of the United States Geological Survey, spoke on "Some Items In a Prosperity Program." A. G. McGregor, consulting engineer, spoke on "A Plea for Sound Economic Propaganda." E. L. Greever of Tazewell, W. Va., spoke on "The Present Industrial Situation in the West Virginia Coal Fields."

Sidney J. Jennings, of the United States Smelting, Mining and Refining Company, spoke at the afternoon session on "Some Methods for Increasing the Use of Silver."

Thomas D'Arcy Brophy, of the Anaconda Copper Company, spoke on "Copper, a Metal of Commerce." He discussed the uses to which copper was put before the war, and the excessive demand for the metal during the period of hostilities. But, he concluded: "During this period of constantly increasing production, the copper industry has not even protected the markets upon which it formerly relied. The war emergency is over, copper production is more than equal to the demand, and now is the time for a great effort within the copper industry itself to recover for copper, brass and bronze their rightful places in domestic markets which during the war were usurped by inferior substitutes."

E. C. PORTER
Convention Manager, American Mining Congress

The concluding paper of the afternoon was read by Capt. Henry George, of the Chase Metal Works, Waterbury, Conn., on "Commercial Future of Copper, Brass and Bronze."

"Although the legitimate field of copper and brass has been encroached upon," Capt. George said, "it is not due to the intrinsic superiority of other metals, but rather to the fact that copper and brass have been left to depend on their established merits whereas the newer competitors rely chiefly on a lower first-cost. Brass, copper and bronze have as wide a field as ever before, and it is the object of this paper to arouse public attention to a condition which if not rectified will result in a national economic loss. To combat the flooding of the market by cheap and unsuitable substitutes the copper and brass producers and fabricators should unite with the engineers in a campaign of public education to check this growing evil. It is not my intention to cast discredit on any particular metal. All have their spheres of usefulness, but it is the duty of the technician to insist that none are diverted to undertakings for which they are clearly unsuitable from the viewpoint of ultimate economy after a prolonged service.

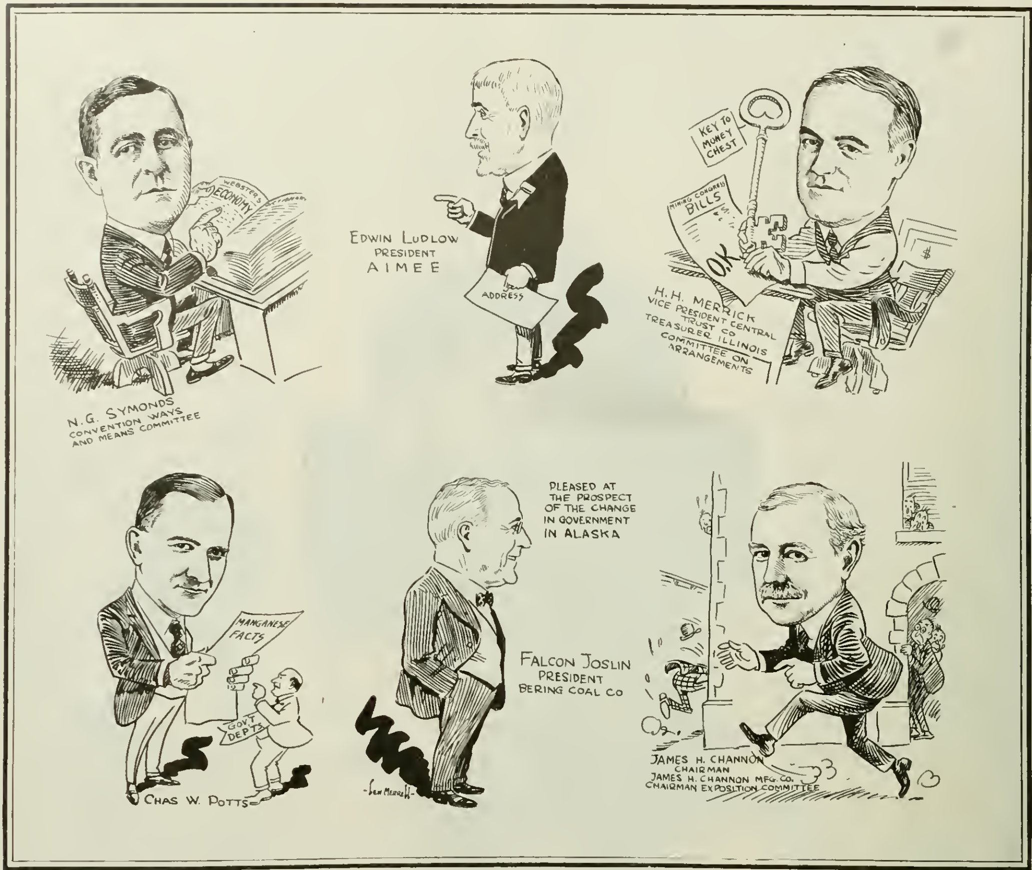
"The commercial future of copper, brass and bronze is assured. It is confidently asserted that both engineers and consumers will return to the policy of using only such materials that show by endurance a maximum return on the investment and will no longer be beguiled by the fetish of a lower first-cost."

Thursday

Addresses were delivered at the morning session by T. H. Watkins, president of the Pennsylvania Coal & Coke Company, on "The Coal Industry and the Public." H. N. Taylor, vice president of the Central Coal & Coke Company, Kansas City, Mo., on "Labor Unions and the Mine Operator;" W. H. Williams, senior vice president of the Hudson Coal and Coke Company, Scranton, Penn., on "Mine Management;" H. C. James, of the Western Petroleum Refiners' Association, on "American Oil Resources," and Senator Samuel D. Nicholson of Colorado on, "A Federal Department of Mines."

H. G. James of the Western Petroleum Refiners' Association spoke during the afternoon on "American Oil Resources." It was his opinion that no one need worry about a future oil supply, as undiscovered fields and oil shale would take care of the largest possible demand.

P. N. Penna, secretary of the Indiana Bituminous Coal Operators' Association, spoke on "The Legal Responsibility of Labor Unions." Mr. Wanamaker, electrical an-



gineer of the Rock Island Lines, followed with an address on "Electric Welding."

The Thursday night session was devoted to the subject of Standardization and presided over by Col. Warren R. Roberts. H. C. Morris, chief of the fuel division of the Bureau of Foreign and Domestic Commerce, read a message from Secretary Herbert Hoover asking the appointment of a committee to co-operate with the Department of Commerce, and was followed by C. E. Lesher, managing editor of Coal Age, who spoke upon "The Mining Industry's View of Standardization," and Col. George S. Gibbs, of the General Staff, U. S. War Department, on Standardization as a Factor in National Defense."

Friday

Luis N. Rubalcaba, Assistant Secretary of Industry and Commerce of the Republic of Mexico, spoke Friday morning on "Opportunities for American Organizations in Mexico." "What has an American corporation to do," he asked; and then answered, "Just go to Mexico and find the same protection as any other corporation in the country. Just go there and find out the conditions. I am telling you all these face-to-face and heart-to-heart. Just go there and find out really what the conditions of the country are and you will realize that you will find no other country in the world where you can make money more easily than you can do it in Mexico."

E. M. Herr, president of the Westinghouse Electric & Manufacturing Company, spoke on "The Importance of Developing American Interests Abroad." America, he said, cannot hope to make the progress her pre-eminent industrial facilities, natural resources and financial strength warrant unless we take our proper position as a leader in exploiting trade with other nations. We must seek foreign trade even when business at home is good, and must send abroad representatives who will stay permanently. The government must establish a well organized commercial department of the diplomatic service, and as a creditor nation we must arrange to extend large loans to legitimate foreign enterprises and to purchase their securities.

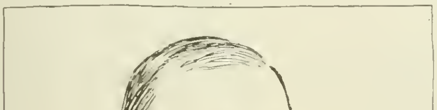
"It must be constantly borne in mind," he concluded, "that the foreigner must sell as well as buy and that foreign trade is of necessity reciprocal. Under present conditions the foreign buyer is in great need of credit and provision for extending it is now of prime importance.

"Let us recognize that never in the world's history has there been a nation with a future so bright as the United States. Our natural resources are unequalled; our industries better equipped and organized than those of any other nation and we have suddenly become the greatest creditor nation in the world. Before the war we were obliged to pay to our European creditors an interest charge of about $500,000,000 per annum. Today they owe us interest in about the same amount. We will, therefore, receive, when the European nations are in shape to pay interest, about $500,000,000 annually in goods from them. Some manufacturers are alarmed at this and overlook the fact that increased imports do not necessarily mean decreased exports. Let us rather be mindful of our obligations as business men of this great resourceful nation, and, putting our shoulders to the wheel of export trade, move forward with the determination to establish the United States in this great commercial field on an even broader basis than did our forebears in old England a century ago."

C. K. Leith, who had attended the preceding day's session, was unable to remain and read his address on "The Essentials of an American Foreign Mineral Policy," but his manuscript was presented and will be incorporated in the printed proceedings.

C. A. Owen, president of the Imperial Coal Company, spoke on "Competitive Costs and the Marketing of Mine Products in Europe." Dr. Henry Mace Payne, New York, spoke on "The Possibilities for the Development of a Permanent Export Market for American Coal."

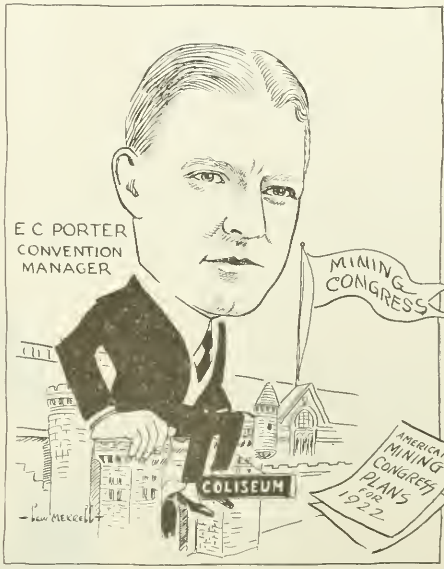
Dr. H. Foster Bain, director of the U. S. Bureau of Mines, spoke during the afternoon on "Mining Opportunities in the Far East." George S. Rice, chief mining engineer of the United States Bureau of Mines, spoke on "Methods Used in Europe in the Control of Coal Mines and the Distribution of Their Products." William J. Hale, of the Dow Chemical Company, Detroit, Mich., spoke on "Protecting American Industry," and Eugene H. Wolff, president of the American Zinc Institute, delivered an address on "The New and Extended Uses of Zinc Products."



FRANCIS S. PEABODY

Chairman of the Board of the Peabody Coal Company and Chairman of the Illinois Committee on Arrangements for the Twenty-fourth Annual Convention of the American Mining Congress and the National Exposition of Mines

At the annual banquet, held Friday night, the toastmaster was Finley P. Mount, president of the Advance Rumely Company. The speakers were Edgar F. Smith, president of the American Chemical Society, on "Chemistry," and Charles M. Schwab, of the Bethlehem Steel Company, on "The Problems of Industry."



The Saturday morning and concluding session was given over to the consideration of resolutions.

COAL GRADING AND STORAGE ARE OBJECTS OF CO-OPERATIVE INVESTIGATIONS

AIMING AT INCREASED efficiency in the coal industry generally and the export trade in particular, the Bureau of Foreign and Domestic Commerce and the Bureau of Mines have entered into a co-operative agreement, preliminary plans for which have already been laid.

Investigations intended to lead to adoption of a coal classification and grading system will form the major portion of activities under the new program, with close attention also being paid to studies relating to the feasibility of coal storage.

The work will be under the supervision of F. R. Wadleigh, newly appointed head of the Coal Section of the Fuel Division in the Bureau of Foreign and Domestic Commerce. Mr. Wadleigh was formerly associated with the Tuttle Coal Corporation, of New York, and the Weston Dodson Co. He is recognized throughout the trade as an authority on coal, more especially in regard to the export phases of the industry.

The Pittsburgh station of the Bureau of Mines will be the central operating point for the investigational program.

Special and general interest of the coal industry will be attached to the work which will be carried on in connection with the problem of coal storage.

COAL MINING PROBLEMS DISCUSSED BY LEADING OPERATORS

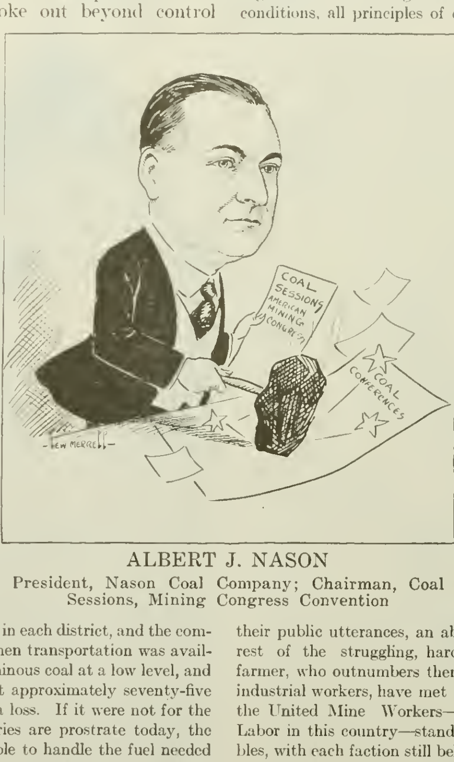
"IT IS FITTING that the Coal Section of the American Mining Congress should take an active part in its deliberations," said Thomas H. Watkins, president of the Pennsylvania Coal and Coke Company, in an address before the convention Thursday morning, October 20. "All mining men have many interests in common and many problems that it is our duty to the public and ourselves to assist in solving."

"The Coal Industry and the Public" was the subject of Mr. Watkins' address. The real serious problems in connection with the coal innustry, Mr. Watkins held, those problems affecting the public as well as the operators, while developing during many years before the war became more acute as a result of the war policies of the national administration and broke out beyond control within a year after the signing of the armistice. Mr. Watkins referred to two policies in particular—the one, government regulation and handling of our transportation system; the other, the development and growth of union labor and "its coddling by the previous administration."

Continuing, Mr. Watkins spoke in part as follows:

Coal Prices Practically Controlled by Railroad Car Supply

"On the matter of transportation, I shall but briefly touch. That subject is so well understood I believe by the general public, so far as coal is concerned at least, that I need but call attention to one fact, i. e., that when transportation and cars were available at the mines, there was an abundant productive capacity at the mines to supply all the coal that was needed, provided the miners were not on strike.



ALBERT J. NASON

President, Nason Coal Company; Chairman, Coal Sessions, Mining Congress Convention

"The competition between producers in each district, and the competition between districts and states when transportation was available, has always kept the price of bituminous coal at a low level, and prior to the war at a level so low that approximately seventy-five percent of the production was sold at a loss. If it were not for the fact that a great many of our industries are prostrate today, the railroads of our country would be unable to handle the fuel needed for normal consumption. There are over 150,000 out-of-order coal cars, in addition to 110,376 idle coal cars in order, and at this time last year there was a shortage of equipment. It is absolutely essential that our railroads should be made efficient, and yet we see their inability to procure funds at reasonable rates in order that they may be put in condition to meet the normal growth of our country needs.

Defiance of Public Opinion by Mine Workers

"The other matter is of vital importance, and one that the operator and miner and the public must come together on—and I say MUST because it is inconceivable that the prosperity of this country should be dependent upon the uncertainties and the unsatisfactory state of affairs that exists between labor and capital involved in the mining industry of this country . This is a problem; it always has been more or less, but never more acute than it is today, and never more menacing, not alone to the coal industry, but to the nation at large. The questions at issue are fundamental; they affect personal liberty and the rights of property and a solution must, and will, be found. If it cannot be found by the operator and the miner, it will be found by and through a profound public sentiment of whose judgment, when it is finally made aware of the issues at stake, I have no fear. I refer specifically to the union labor organization, known as the United Mine Workers of America, an organization founded about twenty-five years ago, which has gradually grown into such strength as to think it is able to defy our Laws, our Courts, and the Government itself, and is in the hands of leaders today who have apparently thrown to the winds all conservatism and all sense of responsibility to the public and to the employer. We see men of real ability in this organization discarding all sense of equity and ignoring all economic conditions, all principles of collective bargaining, all moral obligations to the employers with whom they have dealt in the past and, I might say in a true sense, all obligations to those whom they are supposed to have intelligence enough to represent. We see them all engaged in a scramble for power through personal ambition for the control of an organization that can stop the life blood of the nation, different groups fighting one another, outdoing one another in radical demands, ignoring absolutely the heavy burden that the rest of the public is trying to carry, refusing to consider the modification of a contract that was forced on the industry and on the country at large on the verge of the winter of 1919 by a national strike. We have seen the organization in convention at Indianapolis. We have heard of its internal conflicts. We hear it is going to frame up some demands to be presented to the operators of the country which will add to the cost 40 to 100 percent, but we hear nothing to indicate that it has a feeling of responsibility to the rest of the public at large. We see, from their public utterances, an absolute defiance of public opinion; the rest of the struggling, hard-working people of the country, the farmer, who outnumbers them more than fifteen to one, and other industrial workers, have met the issue in a broad and helpful spirit; the United Mine Workers—the greatest single organization of Labor in this country—standing alone, engaged in internal squabbles, with each faction still believing the organization as a whole is strong enough to defy all economic laws, all public opinion.

"The Miners' Convention recently adjourned deciding to delay presenting their demands to the bituminous operators until next February. It may be that by that time these men, or some of them at least, may come to a sense of their responsibility to the rest of the public. There is no sign of it at this time. In their lust for power, not satisfied with the highest rate of pay of any labor in the United States, not satified with the wonderful improvement that has been made in their working and living conditions, these leaders cry for MORE! MORE! MORE! And now they want nationalization of the coal mines and nationalization of railroads."

Mr. Watkins discussed government regulation, past, present and impending, and in this connection congratulated the industry upon the work being done and planned by Secretary of Commerce Herbert Hoover. He said:

PRESIDENT HARDING REQUESTS AID OF MINING CONGRESS

IN A SPECIAL MESSAGE to the representatives of the mining industry in convention assembled in Chicago, President Harding asked the American Mining Congress to formulate, if possible, plans for regulating the production and distribution of coal so as to secure employment the year around for both capital and labor, and thus to prevent congestion of transportation facilities and high coal prices.

The message was read both at the opening of the National Exposition of Mines and Mining Equipment on Monday night, October 17, and at the formal opening of the convention itself the next morning. President W. J. Loring, of the American Mining Congress, announced that the request of the President of the United States would be considered as a mandate.

During the convention sessions Messrs. Nasón, Cameron, Morrow, Parker and Scholz were appointed to consider the matter. Final action was not taken by the convention.

The letter from President Harding follows:

"The American Mining Congress:—

"Realizing the unfortunate estate into which the mining industry has come, along with so many others, in the period of depression following the war, I regard as especially important the effort of your Congress to bring about an early improvement.

"The present unfortunate situation being a world-wide one, resulting from world-wide causes, complete recovery must await improvement in world conditions; but there are indications that industry is on the up-grade and mining is sure to reflect the improvement which is marked in some other directions.

"I cannot forbear to suggest that your Congress might perform a useful service in connection with the improvement of conditions in coal mining. A widely variable demand makes the problem of production difficult, especially when it involves an overload of the transportation system at a time when that system is least able to bear it.

With both labor and facilities lying idle for substantially half of each year, the costs of coal are bound to be unsatisfactory to the consumer. Is there no way of regulating the demand so as to distribute it more uniformly over the twelve months? Is it not possible to provide storage reservoirs which will enable the large consumers and large producers to accommodate their conditions to the need for a more constant rate of production?

"I feel that these questions may, with particular propriety, be addressed to your organization. Adequate improvement can hardly be expected in the coal mining industry until the army of working men and the vast capital engaged in it find constant employment.

"I would be glad indeed if your deliberations might produce some suggestions of practical value in dealing with this difficult problem.

"Very sincerely,

"Warren G. Harding."

"There has been much agitation during the past two years in attempts to pass through Congress bills regulating the coal trade. The public becomes concerned when a scarcity of coal is threatened, is thrown into a panicky condition and buys indiscriminately, causing high prices. Then, immediately there comes a public outcry against extortion, and we find plenty of legislators, willing to get into the public eye, proposing bills to regulate the industry; as a rule this outcry is against the operator, and yet the conditions that bring about these high prices have for the past forty years been caused entirely by lack of transportation, strikes on the railroad, or strikes at the mines.

"If Congress would give the necessary attention to re-establishing our railroads on an efficient basis, after years of faulty regulation, one cause for occasional high prices for coal would be removed. Then, if they should give their attention to the prevention of national strikes, and a removal of the cause for them, making the United Mine Workers legally responsible for their contracts, protecting the rights of those who did not want to belong to the union, there would be little need for further regulation.

"There is one encouragement that we have today in the present Administration. In charge of the Department of Commerce is one of the ablest mining men of the country. He is a man of vision and force, and the coal and mining industry of this country can well afford to co-operate with him on broad lines. While we need less government in business, we certainly do need the co-operation of a department which is equipped to study, and has the ability to understand our problems, in order that false theories in regard to the handling or regulation of our industry may not make further headway in the legislative branches of our government.

"It is my judgment that a gathering of proper statistics in regard to invested capital, cost of coal, realization, wages paid and annual earnings might be of value in preventing the passage of such unreasonable, unfair and destructive laws as proposed by Senator Kenyon provided the statistics were gathered by a department of the government which would have no administrative authority, and no incentive to color the facts for political purposes, and whose duty would be confined to ascertaining the facts for the benefit of intelligent public opinion, making unnecessary the disastrous interference through government regulation of ignorant, inefficient or prejudiced public officials in the conduct of this great industry. The general public is very apt to think that coal can be produced at a uniform cost, not recognizing the physical differences that occur and which affect costs in every mine in the country, and has little knowledge of the varying qualities and relative value of these different qualities.

"The American Mining Congress can well afford to give its serious attention to this proposed legislation. If by any chance such bills as the one proposed by Senator Calder about a year ago and the one recently proposed by Seaator Kenyon should pass and become a law, it would inevitably lead to the passage of further regulatory bills affecting every phase of the mining industry and all manufactures, our iron mines, our great steel industry, textiles and shoe manufacturing—none could hope to escape, as there is as good reason for regulating all industries as there is for regulating the coal industry."

FUTILITY OF GOVERNMENT REGULATION SHOWN BY PEABODY

FRANCIS S. PEABODY, to whom the government turned first to secure increased production and better distribution of coal when this country entered the war, in an address at the opening session of the Twenty-fourth Annual Convention of the American Mining Congress predicted the absolute failure of all government efforts to control business—the coal business or any other business. Mr. Peabody was chairman of the Illinois Committee on Arrangements for the convention.

Mr. Peabody said he had been waiting for four years to express his opinion of government control of the coal business, and he was glad to have the opportunity to do so for the first time. It was the opinion of those who heard him that he covered the subject in its entirety and handled the question without gloves.

SECRETARY HOOVER SEEKS CO-OPERATION OF MINING CONGRESS

THE FOLLOWING message from Secretary of Commerce Herbert Hoover was brought to the Mining Congress convention by H. C. Morris, chief of the Fuel Division of the Bureau of Foreign and Domestic Commerce:

"The Department of Commerce is charged, under act of Congress and by virtue of the desire of the Federal Government to be generally helpful, with the stimulation of the distribution of commodities. The mineral production of the United States is, therefore, a matter of keen interest to the Department and one in which it has the greatest anxiety to be of service.

"The Department is not a regulatory Department, but a Department of service. Its functions, so far as they are developed, are largely in the direction of the promotion of foreign trade, the furnishing of statistical information both foreign and domestic, and the conduct of investigation work in the great physics laboratory of the Bureau of Standards.

"Except for a few of the metals our export trade in mineral commodities is indeed badly disorganized, and it is with the purpose of assisting the industry to better this organization that we have reorganized the Bureau of Foreign and Domestic Commerce and installed a Fuel Division. We hope to be able also to establish divisions to directly assist the business in other minerals.

"It is the desire of the Department to cooperate with the great voluntary bodies of the industry in the development of this service, for the Department is endowed with agents in almost all quarters of the world and is able to develop facts with regard to supply and demand, and to assist the American exporter in the actual negotiations of his business.

"Success in selling, whether at home or abroad, is founded upon an accurate gauging of buying ability; and that, in turn, must of necessity be based upon accurate and prompt information of general conditions in the market centers of the world, and upon specific conditions of competing foreign industries.

"In statistical information the reorganization of the Bureau of the Census, to cover a wider field of live and current statistics, is of profound interest to the mineral industry; not only because that industry depends considerably upon the trend of other industries, but also because statistical information of consumption in the industry itself falls far short of satisfying the necessities of the business.

"In the reorganization of the Bureau of Standards to include the wide theme of manufacturing standardization and simplification, the Department again comes into relationship with the mineral industry.

"For all these reasons it is the keen desire of the Department that it should be brought into closest relationship for cooperation with the industry, and it seeks the appointment of a committee from your Congress which will co-operate with the Department.

"The mineral industry of this country should gain a position in the world's trade commensurate with the abundant resources of the United States. We must develop a spirit of mutual helpfulness and coordination of effort in order to meet the competition of organized commerce abroad, and with that purpose in view, I pledge you the full assistance of the Department of Commerce."

"The government," Mr. Peabody said, "should give us pure food, pure liquor, prevent forest fires, protect our water resources and our virgin coal and minerals, etc., but whenever the government steps away from its police powers of protecting our sanitation and our resources it will not be successful. Not even the most stringent form of federal control will ever be successful."

Mr. Peabody stated that when the coal operators met in Washington June 17, 1917, they agreed, at the request of Secretary of the Interior Lane, to fix the price of coal at the mine at $3.00 per ton, their course in this respect having been previously approved by the Assistant Attorney General of the United States. Nevertheless, the next morning the Attorney General denounced their action as illegal, and Secretary of War Baker pronounced the price of $3.00 per ton exorbitant, unjust and oppressive. In the face of these two statements both the coal operators and the public became discouraged. Production fell off, prices soared, and the country suffered. Mr. Peabody expressed his opinion that Secretary of War Baker and the Chairman of the Federal Trade Commission were responsible for the suffering of the people of the United States during the winter of 1917–18, which suffering came about as Mr. Peabody had predicted.

"I do not think that either the Clayton bill or the Sherman Anti-Trust Law have the slightest effect on business," Mr. Peabody said. Mr. Peabody then explained that farmers have a perfect right to combine, and yet corn is selling at 19 cents at the farm; labor has a perfect right to combine, and as a result of the Clayton bill has combined and workmen are demanding $8.00 to $10.00 per day, but the only result is that two-thirds of those who have combined are now out of work. "No law," Mr. Peabody continued, "either granting permission to combine or withholding permission to combine can ever overcome the inevitable law of supply and demand."

Mr. Peabody said that it was laughable to believe that 10,000 coal operators with veins of coal from 2 feet to 50 feet thick, operating in different states under different tax laws and different expense, could ever form an effective combination to hold up the price. He condemned the pending Kenyon bills, saying that no coal operator could understand them, and concluded with the statement that government regulation has no effect other than to embarrass and add to the expense of the coal operators and increase the price to the consumer.

TAYLOR ADVOCATES HOLDING UNIONS RESPONSIBLE FOR THEIR ACTS

H. N. TAYLOR, vice president of the Central Coal & Coke Company, Kansas City, delivered an address on "The Relationship Between the Coal Operator and the Labor Union." He stated the labor unions have departed from their original high purpose when arbitration was the means of settling disputes and now more frequently use "economic force," which is nothing more or less than a strike.

Mr. Taylor criticized the check-off system, saying that it was mainly responsible for the growth of radicalism in the miners' organization and that its purpose had been so abused that today it is a menace to the public welfare.

"The huge sums realized from the check-off have been expended to carry on a lawless war condition in more than one of the non-union coal producing states," Mr. Taylor said. "These funds have been diverted in another state and have been used for the defense of the I. W. W.'s under arrest for offenses against the laws of the nation. It was the vast sum created by the check-off which made conceivable the nation-wide strike of November, 1919, when the people were threatened with freezing in an effort on the part of the miners to enforce their demands."

Mr. Taylor insisted that business should return to normal but that the coal mine workmen were doing everything possible to prevent such a return by taking a stand against all wage reductions on April 1, 1922. The public, he said, would bear the extra expense.

Concluding Mr. Taylor said:

"The high cost of coal is translated into high cost of many other important commodities. Cement is an example; labor and fuel are its principal cost items. High priced cements retards building, and the housing problem is the result. The retarding of the building program has had largely to do with unemployment and high rents.

"The high cost of fuel and transportation keeps high the producing cost of almost every manufactured article, which in turn affects the cost of living. Coal being basic, the cost of all commodities is affected, and there can be no real adjustment on a sound basis until the cost of coal is returned to a peace basis.

"The wage worker is a consumer of all commodities, including the commodity he produces himself. What is commonly called the public is largely the wage worker himself. If we are to adjust and allow business to become normal again, we must treat the situation from a broad, nation-wide viewpoint, and not by class or the individual industry. A high wage paper scale with no work will not help the miner. A fair wage with regular work will build his yearly earnings "to a basis of American living and allow the operator to offer cheap fuel to the consumer and reduce the producing cost of all commodities.

"Gentlemen, it is up to union labor to do its share of the readjusting, not only in the public interest but to help themselves.

"If the miners continue their refusal to make a readjustment of an abnormal wage scale and on April 1st call a nation-wide strike, the operators must assume a public duty of standing for the public rights, and the well-thinking men of this country must stand behind them in this battle for the good of American industry and American freedom against a labor autocracy."

LUDLOW FAVORS EARLY LIQUIDATION OF LABOR SITUATION

IN AN ADDRESS upon "Coal and Labor," Edwin Ludlow, President of the American Institute of Mining and Metallurgical Engineers, stated that the anthracite situation was satisfactory from all standpoints except from the labor point of view. Despite the fact that the coal mine workmen have more continuous employment than in the bituminous fields, they are making demands for a higher scale of wages effective next April.

Only a very small proportion of American coal can be exported, according to Mr. Ludlow's view. This is due mainly to the fact that American coal must be paid for in money, of which other nations have very little, whereas these other nations can trade among themselves upon the basis of barter.

But the most important feature in connection with the reconstruction of our whole industrial system, as well as with export coal, is the question of labor, Mr. Ludlow said. He emphasized especially the fact that the coal mine workers of America keep in contact with the union mine workmen of England, and that when the time comes for bargaining across the table on the first of next April the demands of the American mine workmen will be largely formulated by the results of the recent agreement made in England, and that the English miners will use their influence to minimize the competition from this country.

Concluding, Mr. Ludlow emphasized the necessity for wage reductions, saying:

"The most important feature in connection with the reconstruction of our whole industrial system that was disrupted by the war is the question of labor, which is fighting to retain every advantage the war gave it. We are now faced with the fact that the raw material produced by the farmer, by the metal miner and, to a certain extent, by the coal miner, is being sold at cost or less, but the manufactured article has not come down in proportion to the fall in the raw material, due to the high wages that are paid in every industry, especially in coal mines and on the railroads. Reductions in wages would reduce the cost of living, and unless these wages are brought down, the cost of living cannot be brought back to the pre-war basis and we cannot hope for the stabilization of our industry until this has been accomplished. The period of hard times that we have gone through has seemed long and we all look ahead for better conditions, but it would be a mistake if those conditions should improve too rapidly until the labor situation has been liquidated and its efficiency brought back.

"The most dangerous doctrine that we are called on to face is the minimum wage based on an assumed standard of living, that must be paid whether the laborer produces the value of his wage or not. The acceptance of that theory can lead only to sovietism. If the laborer is paid more than the value of his product, the operation soon becomes bankrupt unless the difference is made up, and the only unlimited pocketbook is the U. S. Treasury. In that lies the kernel of the demands for nationalization by the coal miners and railroad employees."

EXPORT COAL PROBLEMS

GEORGE S. RICE, chief mining engineer of the U. S. Bureau of Mines, and Dr. Henry Mace Payne, chairman of the Coal Export Committee of the American Mining Congress, presented timely information to the convention.

Mr. Rice, who spoke upon the subject, "Methods Used in Europe in the Control of Coal Mines and the Distribution of Their Products," only recently returned from a European tour made for the purpose of investigating this particular subject. In the course of his address he made constructive suggestions. He spoke in part as follows:

"We have presented here three types of control of mining and marketing of coal. England has the individualiste method, with unlimited competition, as in the United States and with the same tendency to unstable markets, is saved from periods of acute depression from overproduction only by the ability to dispose of its surplus coal by exports. The slow and expensive development of new mines, necessitated by the deep lying coal, is also a break on overproduction. Germany has some government owned mines and the ability to restrict unnecessary development of new mining areas by withholding the granting of concessions, and with selling syndicates operating with full concurrence of the government encouraging export and restricting production to prevent a surplus in the coal market, at the same time encouraging betterments in mining methods; and France has no surplus production but on the other hand need of importing, and, by virtue of partnership with the government, the mine owners always are assured of making profit although ostensibly without condemnation to fix prices.

"It appears to the writer that from England we can borrow the idea of development of exports as a means of disposing of the surplus, the briquetting of fine coal, and the stocking of coal at distant ports throughout the world.

"Regarding German methods, whether we can utilize any ideas from their plan of syndicates is a question. Our whole national tendency is to oppose combinations held to be 'in restraint of trade,' but it is possible we could employ the idea of restraining the overdevelopment of coal mines with its accompanying tendency to wastage and irregular work for miners (which in turn reacts on the cost of coal to consumers) by not giving shipping facilities to proposed new mines unless it was known to some authoritative body, such as the interstate commerce commission, that new developments were needed. In any case we can learn from Germany the utilization of coal byproducts, the briquetting of lignite as well as bituminous fines, and betterments in mining methods such as hydraulic sand filling to prevent subsidance and mine fires, and the use of substitutes for timbering.

"From France we may learn that it is possible to have an amiable understanding or partnership with the government without loss of initiative in mining developments. We also may learn thoroughness in extraction of coal in thin as well as thick beds, and, where there is a large territory tributary to a mine, whether it may be made a more permanent local industry rather than in the usual way to extract hastily the thickest or best coal; also to put in more permanent and even artistic plants which will continue to be the sort of support to the community, over a long period even though this plan may not bring the largest or an immediate return on capital through the quick extraction of the easily mined coal.

"From all three countries as well as from Belgium we can at least learn much in the careful preparation of the coal for the market, the stabilization of the quality of the coal and in matters of briquetting and stocking, and especially from France and Germany give consideration to that part of the purpose of mine operator's organizations which have done so much in those countries for miner's welfare, protection of life, and investigations for improvement in mining methods.

"The writer also ventures to suggest that while the project is an admirable one of encouraging the stocking of coal in the U. S., which has been so much discussed since the war as a means of preventing stoppage of bituminous mines in the summer and consequent need of paying the miners higher wages than in other industries to provide adequate living, the cost of which must ultimately be borne by the consumer, it is a project that will fail to accomplish its full purpose—permanent stabilization—unless some measures are taken, as in Germany, to prevent the overdevelopment of bituminous mines which have already reached double capacity now required by the country."

MEMBERS OF THE MINING CONGRESS STAFF

As the cartoonists saw them at the Chicago Convention and Exposition. Upper row, left to right—McK. W. Kreigh, chief of the Tax Division, always willing to assist either the Internal Revenue Bureau or the mining taxpayer; H. N. Lawrie, economist, trying to be of service in bringing about stabilization of exchange rates; George H. Bailey, general counsel, getting ready to pay his respects to those members of the mining industry who fail to co-operate with Congress. Lower row—Herbert Wilson Smith, chief of the Tariff Division; J. F. Callbreath, secretary, in what the cartoonist described as a leisure moment; T. R. Moss, editor of the MINING CONGRESS JOURNAL, looking over the day's convention publicity.

RECOMMENDATIONS OF CHAIRMAN OF EXPORT COAL COMMITTEE

DR. HENRY MACE PAYNE, chairman of the Coal Export Committee of the American Mining Congress, delivered an address on "The Possibility of Development of a Permanent Export Market for American Coals." He presented a brief review of existing conditions in Europe as they apply to South and Central American export business. It was his opinion that there is a good export market for American coal and that increased business can be secured if price and preparation are right. He pointed out that Great Britain possesses certain economic advantages such as proximity to the seaboard and assurance of return cargoes, and that these advantages would have to be offset by organized and cooperative selling methods and by such reduction in the cost of production and transportation as would enable American dealers to quote ton for ton against competition. British costs must inevitably be higher than normal American costs of production, according to Dr. Payne's view, but against this advantage American dealers have the disadvantage of having to pay transportation charges for from 400 to 500 miles to the seaboard, the net result being an average British quotation 70 cents below the lowest possible American quotation in foreign markets.

"To meet this condition a group of American exporters," Dr. Payne said, "is now preparing an application to the Interstate Commerce Commission for a flat reduction of $1.00 per ton on coal destined to Europe and South America."

The question of credits was also considered in the ad-

THE ANNUAL BANQUET

At the Congress Hotel, Chicago, October 21, 1921, the night before the close of the Twenty-fourth Annual Convention of the American Mining Congress

dress. The United Kingdom shippers have always extended 60 to 90 day credits to South American consumers. American shippers have difficulty making financial arrangements today because profits are so small. Dr. Payne held that the time is propitious for the formation of intelligent coal exportation movements by American dealers.

"The Webb Act," Dr. Payne continued, "has paved the way for cooperation. The pooling system can be successfully developed to guarantee rigid inspection and quality of product, and to minimize demurrage charges.

"Given the proposed reduction in inland freight rates; reasonable labor costs at the mines; normal charter rates for ocean freights; and America can meet any competition in the world on export coal to the Mediterranean, Central and South American ports.

"When this has been accomplished, the coal industry in America will have become more nearly stabilized, mines will be working more continuously, quality and preparation will be more closely regulated, and coal prices more nearly normal than ever before.

"To this end the Coal Export Committee of the American Mining Congress, representing as it does the producer, the wholesaler, the Bureau of Mines, the exporter, and the banks interested in foreign trade,—pledges its efforts."

PAYROLLS OF MINING AND STEEL INDUSTRIES SHOW DROP

MARKED DECREASES in payrolls of the iron, steel, and bituminous coal mining industries are indicated in statistics compiled by the Department of Labor, comparing figures for September, 1921, with those of a year before. Although the report covers returns from a limited number of enterprises, it is thought to be typical of general conditions.

The greatest decrease in wages paid by any industry in the country is indicated in the returns of 106 iron and steel plants showing a reduction of 71.1 percent. from the total of a year ago, while the number of men employed decreased by 42 percent. These plants showed a continuation of this reduction in the month of September, 1921, wages dropping 5.4 percent. from the August total, although there was an increase of 2.4 percent. in employment.

Both payrolls and the number of men employed increased during September in the 95 bituminous mines making reports for that month, 3.3 percent. more men being added, and total wages paid rising 2,5 percent. Comparison with September, 1920, however, shows a decrease of 11.8 percent. in the number employed, and a drop of 32 percent. in monthly payrolls totals.

SCHWAB DISCUSSES COAL BUSINESS AND GOVERNMENT REGULATION

BUSINESS SUFFERS from an excess of national, state and municipal overhead, in the opinion of Charles M. Schwab, who spoke at the annual banquet of the American Mining Congress on "The Problems of Industry." And, as he pointed out, when business suffers the consumer suffers, and therefore what the country needs most of all is relief from governmental regulation of and interference with private affairs.

Mr. Schwab spoke as follows:

As a large consumer of iron ore and coal, and as a producer of both, I am naturally deeply interested in the problems of the mining industry, and in the efforts which the Mining Congress is making to arrive at their solution.

To my mind, there is nothing in the present business situation which time and the laws of trade and economics will not straighten out. The danger lies in the effort to force an adjustment through legislation.

We are in difficulties, there is no doubt about that. Prices have dropped irregularly. Wages have gone down in some lines, and are maintained in others. Short time has reduced the earnings of many workmen, and unemployment has put a heavy burden on many more.

The products of the farm have dropped to about pre-war levels, and the high cost of transportation invades deeply the farmer's narrow margin. Yet the railroad workers resent any reduction in wages which will make a lowering of freight rates possible.

The building trades in your good city are resisting the reduction in rates, and the changes in rules provided in the very wise award handed down by Judge Landis.

Everywhere the process of readjustment is creating discord and discontent. Everywhere our people want to hold on to what the War brought in the matter of increase in income, and want to lay the sacrifice involved in deflation on some other back.

It is perfectly natural for a baby to cry when you remove the bottle before it has had its fill. It is perfectly human to resist a reduction in one's income, and to submit only after considerable argument and effort.

A LEADER OF INDUSTRY

Charles M. Schwab took his optimism with him to the Mining Congress Convention. Just before he delivered his address at the annual banquet, the artist showed him the above sketch portraying the well known Charlie Schwab smile. Mr. Schwab was so pleased that he wrote his motto, "Keep on smiling," and autographed it with his initials

What a splendid world this would be if we could get back to normal by the mere process of passing a few laws!

We have tried legislation on some things, and it hasn't worked well. We have tried putting directive control of our railroad systems into a single hand, and the memory of that experiment is still vividly with us. Russia embarked on the plan of centralizing the control of all industry in government hands, and no one is anxious to take another chance at that experiment.

Yet many of our people clamor for relief through legislation whenever, after an orgy of prosperity, economic laws insist on reasserting themselves. And our legislators are altogether too prone to yield to these clamors, with the result that inelastic, repressive legislation checks initiative and thwarts enterprise.

I know of no better stimulus for creative ambition than the hope of personal reward. Intelligent self-interest, not selfishness, cannot be equalled in securing results in business. It surpasses any form of communal co-operative effort. And when competition has free rein, there is ample restraint and ample protection to the public interest.

The American business structure is the result of over a hundred years of initiative, enterprise, courage and effort. It has grown to its present size because it has learned through many hard knocks to conform to sound economic principles. Those twin brethren, supply and demand, have in the long run fixed prices fairer to the consumer than could the wisest commission sitting in Washington, and they have imposed heavier penalties for errors in judgment than would a bolshevist court.

I need only point to the terrible losses in silks, in leather, in sugar, within the past year, to indicate the severity of the penalties to those who guess wrong, or who fail to observe economic laws.

What I am trying to get over is that economic laws are constantly at work checking excessive consumption, and stimulating production by raising prices in times of great demand; and reducing production and encouraging consumption by lowering prices in times of depression.

There is no commission or governmental agency that could adjust the balances as well or as wisely.

At the very time when the Government is trying most desperately to get out of the shipping business, it seems to be headed straight for the coal business.

The high prices prevailing for coal during the past year are generally supposed to be due to a combination of the great coal producers, who, by the power of monoply, have raised prices to extortionate heights. It is also supposed that the coal deposits are approaching exhaustion, and that for both reasons government control, or at least regulation, of the industry is imperative.

Yet the testimony given some months ago before the Senate Committee on Manufactures showed that there exist in the United States proper some eleven thousand coal mines controlled by seven thousand operators. The greatly increased demand for coal incident to the European war, as revealed before the same committee, almost doubled the number of mines, so that the fifty-seven hundred and seventy-six operations existing in 1913 increased to eleven thousand in 1920.

Can there be a monopoly in an industry so widely distributed, so widely owned? The very fact that so many new operations started as the result of increased demands shows that there is no monopoly in the ownership of coal deposits, for believe me, a monopoly has altogether too much sense to spread itself in this fashion.

The coal deposits, not counting Alaska, were stated by government experts and coal operators to be between three and four trillion tons. They are for all our purposes inexhaustible and on neither premise, therefore, is government interference or regulation justified.

I have been in competitive industry so long that I am constantly on guard against an increase in overhead, and I am opposed to the creation of new methods that transfer men from the producing column to the overhead column. I have to be shown that the transfer will bring returns, that it is in reality helpful to production before I give consent.

Yet we have witnessed for some years a constaut increase in our national and state overhead expenses. The creation of new departments for supervising this, regulating that, or controlling the other has been going on merrily, and with each additional function assumed by the state or nation some person or group of persons has been transferred from the producing group to the overhead group.

No manufacturing plant would thrive very long if it continued to increase the personnel of its office by reducing the number of workers in its shops.

We suffer today from an excess of national, state and municipal overhead. There are too many of our people employed by our various governments and too few in productive industry in normal times. Every time you create a new commission or new government department every producer groans under an additional burden. I feel most strongly that our legislators ought to bear this fact in mind and that they ought to give American industry an opportunity to adjust itself without loading it up with any further overhead.

I don't want to take your time to go into the details of high coal costs, but want to submit just a few thoughts that have occurred to me as aids to an improvement in the bituminous coal industry Undoubtedly you have had the same ones many times, but they will lose nothing by repetition.

The productive capacity of your mines in normal times is fifty percent greater than your demand, and it follows therefore that your mines, even in fairly prosperous times, must shut down a third of the time. It means that 700,000 men must be idle one-third of the time and that their wages must be increased so that they can live for twelve months on the earnings of eight. It means that two billions of capital invested in the industry is profitably employed during only two-thirds of the time, that deterioration of timber and machinery during the idle time must be paid for, that pumping and ventilating machinery must be kept going whether there is coal output or not.

And all these adverse factors which add so materially to the cost of coal must inevitably be passed on to the consumer.

Your problem is to distribute your demand more uniformly over the twelve months, and this can be done by such a concession in price as will induce large consumers to undertake the expense and suffer the deterioration of heat values incident to storage, and to pay the interest on the investment.

The waste due to the intermittent operation of the coal industry is a heavy public burden which ought to be reduced, and only a distribution of the demand over the twelve months period will do it. Make it worth the consumer's while to store the coal and he will do so. There, I believe, lies the solution of one of your major difficulties.

BITUMINOUS PRODUCTION INCREASE FAILS TO REACH PRE-WAR PLANE

BITUMINOUS COAL PRODUCTION increased sharply during the week ended October 15, but remained much below the level reached in corresponding weeks of the past four years, according to the Geological Survey. The week's production was 9,696,000 tons, including lignite and coal coked at the mine, a total which stands 573,000 tons above the figure for the previous week. The average for the first 15 days of October was only 1,568,000 tons, indicating that production is still below the pre-war level.

A study of the number and capacity of bituminous mines which were idle during the week ended October 1, show improved conditions as compared to the results of tabulations made for the week ended August 20, the percentage of mines closed during the entire week falling from 36.0 to 32.8. It was shown, however, only 3.4 percent of the mines reporting to the Survey for the corresponding week in 1920 were idle.

CHARLES PIEZ

President, Link Belt Company, chairman of the Speakers' Committee for the Annual Banquet

Annual Address of President W. J. Loring

Delivered at the opening of the Twenty-fourth Annual Convention of the American Mining Congress, Chicago, October 18, 1921

ANOTHER year has passed, all too soon, perhaps because we have been so occupied with serious problems that we have paid little heed to the passage of time. The receipts for the year just ended show the substantial figure of $150,000, which, compared with the year before, again indicates the hearty support of its members and subscribers. This is the best indication of approval of our endeavors during the last period, and it has been a strenuous one, indeed.

The efficiency of the organization has been well maintained and is available at all times, and for all purposes, for its members at its headquarters in Washington.

The Mining Congress Journal has grown in importance and I think it is a useful journal and one of which the American Mining Congress members should be proud. It does not trespass upon the rights of the other publications and is altogether a creditable journal. It has earned some profit, which is a fine achievement for a newly-born journal of this kind. The usual bulletin service continues and gives much satisfaction to members of the Congress, as the details contained in these bulletins are of vital importance to the mining industry.

The American Mining Congress is a useful organization to the various branches of the mining industry and is being looked upon more and more each year as the mouthpiece of the mining industry. This is what it exists for and I hope that each year will see the membership increase as it has done in the past, as that will prove that it is growing in importance.

The Congress has passed through a most trying year. Your directors and able secretary have been ever mindful of the great task before them and have given good council during these most trying months when every one and everything pertaining to our affairs have been at high pressure; when the slightest mistake would have been considered ample opportunity to find fault. Under these conditions, great strides have been made. Note the wonderful exposition in the next room. Do you suppose that show came into existence without great effort? I should say not. Could it have been accomplished during these days of cautious expenditure of money if there had not been confidence in the American Mining Congress? I say, no.

We have continued our campaign for the passage of the McFadden Bill. While we have not been successful in getting the support we had anticipated when the campaign was commenced, we have not given up hope, for some good will come from the energies put into this campaign.

The troubles of the country have not been finally settled. In my opinion, capital and *labor must work in harmony. They must try and see the troubles of each other; labor must not feel that the burden is all upon its shoulders. Just as long as there is a lack of understanding on the part of labor that the employer has his troubles, and that these troubles are not beyond understanding at that, there will be useless waste of energy and strife between them. There is no mystery in any of these businesses; nothing that should not be fully discussed and as fully understood by labor. The one great principle should be fairness and I so hope that we American people will come to use the good sense that this great country has been the means of giving us, and that has been helped by the freedom that extends to the border lines of our wonderful country, and that common sense will prevail in the settlement of disputes that may confront us from time to time.*

Blood cannot be extracted from a turnip; neither can an industry exist if the cost of production is more than the same value of the product. These facts cannot be ignored. Then why the unnecessary strife and bad feeling that is allowed to be born if the actual fact proves that there is only one way for a settlement?

I am a large employer of labor and am well versed in the trials of both sides; hence, my remarks as to the uselessness of disputes when the fact of a necessity for arbitration can so easily be ascertained.

Our government has its troubles these days. Let us all do our part to relieve the strain upon those in Washington; by so doing we relieve ourselves of unnecessary strain also. President Harding has been good enough to write us suggesting that we take up certain matters during our week of deliberations here. We look upon this as a command and the American Mining Congress is ready to assist the government of the United States to the fullest extent at all times and I am sure that you will support me in this statement. I will ask our secretary to read the letter presently.

Now, before closing my remarks, I am going to take up your time for a moment to call attention to one member of this organization who is responsible for our being here today. It falls to the lot of some one man, or woman, in all businesses to be the real foundation upon which the business is built. Sometimes, very often in fact, that one person is assisted by valuable assistants. Altogether they make a great success but the one individual has organized, selected assistants, etc., and he, or she, is the brains behind the scenes without whose guiding spirit the business would fail to function. That man in the American Mining Congress is Mr. J. F. Callbreath, your ever faithful secretary, who does not save himself but stands ever ready to protect this wonderful organization that is due to his untiring efforts. He is ably assisted and I can speak with some knowledge of him and them because I have been closely associated with the American Mining Congress for the past year. I just wanted you to know my opinion of your worthy secretary, who is too modest to speak for himself and who will not, perhaps, altogether like what I have said. I did not ask his permission; however, I believe in fair play and giving credit where credit is due.

UPON announcing to the convention the unanimous re-election of W. J. Loring as president, Secretary Callbreath in presenting him to the convention, said:

"May I be permitted at this time, as I am about to present to you the president for the ensuing year, to express my heartfelt appreciation of his cordial sympathy, his active cooperation, his earnest effort at all times during the past year to sustain the efforts of our organization and to do all of those things which a president can do in building up and strengthening the organization. It is a very gratifying thing to be able to state that during a year of very great depression, as this has been, and particularly in the mining industry, the American Mining Congress has been able under his wise leadership and assistance to keep up its financial support; we have been able to maintain our organization intact; we have done many things and incurred a number of outside expenses which have been more or less unusual, and I want to say that without that cordial support this work could not have been accomplished. This was a year of depression. Most every organization which had been in the habit of giving expositions, this year said, 'No, it is foolish for us to try in this time of depression to pull off any enterprise which calls for financial support of the business interests.'

"Our leader said, 'When the others falter it is time for us to go ahead.' His watchword was, 'Let's go.' I point with very great satisfaction to this marvelous Exposition of Mines and Mining at the Coliseum as a tribute to that policy of our president who said, 'Let's go.'

"I take great pleasure in presenting to you Mr. Loring, the president for the ensuing year."

THE NATIONAL MINE TAX CONFERENCE

By McK. W. Kriegh

Chief of the Tax Division, American Mining Congress

FARREACHING RESULTS should be obtained from the deliberations of the national mine tax conference between state officials and representatives of the mining industry held October 17-22 in conjunction with the twenty-fourth annual convention of the American Mining Congress at Chicago. Realizing that the difficulties now confronting the mining industry on account of depressed conditions and high taxes require a policy of economy in state and local expenditures and that the present disparity between the various state taxation and revenue systems places the mines of some states at a disadvantage as compared with competitive mines of other states, the conferees gave the subject of state taxation of mines special consideration.

The keynote of the convention, "conservation of our natural resources by the elimination of waste and inefficiency wherever found," suggested by President W. J. Loring, was taken as the basic purpose of the conference. The discussion was predicated upon the waste that is going on in the mining districts on account of the tendency to extract high grade ores and leave low grade ores, particularly in the case of metals, which can not be mined at a profit under present market conditions and increased state and federal tax burdens.

In outlining the purposes of the conference, Paul Armitage, chairman of the Mining Congress Tax Committee, declared "that mines are national and in part international enterprises. They are not local. They do not sell their products in the states, but sell them over the entire country in competition with mines of other states and of other countries. Therefore, the need of uniformity of taxation becomes paramount." "There has been a progressive movement in certain states in recent years," he said, "toward the penalization of mines, and that movement has been growing until the mines of those states are in a position where they can not operate against that penalization."

In an address delivered at the opening session of the conference on the work of the National Conference of Commissioners on Uniform State Laws, Nathan William MacChesney, chairman of the Executive Committee of that organization, pointed out that each state regarded the matter of taxation as its own concern, and usually proceeded on the principle that the right to tax was the right to raise revenue wherever and however possible until the squeal of the taxpayer became so loud it had to desist. For that reason, he said, the organization, while it had secured the passage of many uniform laws, had taken no definite action on the matter of uniform taxation. He noted, however, that there is a growing feeling that a state can not afford to penalize its own industries in such a way as to drive capital from the confines of the state. He suggested that if this conference decided uniform taxation of mines is desirable, the National Conference on Uniform State Laws could be of very real service in formulating an act which would stand some chance of passing in the various states, particularly if it had the backing of the mining industry when introduced into the state legislatures.

Continuing the discussion with an address on the difficulties of administration of tax laws, Robert N. Miller, formerly Solicitor of Internal Revenue, called attention to the fact that in the case of mines there does no exist that natural restraint upon the local taxing power which exists where the people of a locality consume the product, and therefore there is lacking the control of local influence which usually equalizes taxation in the case of other industries.

Other speakers at the conference were: Judge E. C. Stimson, Colorado, Hon. Chas. R. Howe, Chairman, Arizona Tax Commission, Hon. J. G. Armson, Chairman, Minnesota Tax Commission, Hon. H. B. Barrett, Michigan, Hon. A. G. Mackenzie, Utah, Mr. J. C. Dick, Utah, Mr. Burton Bunch, New Mexico, Mr. D. M. Kelly, Montana, Mr. Geo. E. Holmes, New York, Mr. H. B. Fernald, New York, Mr. C. Zapffe, Minnesota, Mr. T. O. McGrath, Arizona, Mr. Arthur Thacher, Missouri, Senor L. de Silva representing the republic of Mexico.

The situation in Minnesota illustrates how seriously the mines of a state may be affected where there is no restraint upon the taxing authorities. In the year 1920 the total of taxes levied for all state and local purposes on mineral property in Minnesota amounted to $20,255,223; but local levies were said to be largely responsible for this heavy burden. The average per capita levy for local and school purposes in 77 cities and villages in the state, not located in the mining districts, amounted to $31.89 in 1920, while in 17 cities and villages located in the mining districts the average per capita levy for local and school purposes was $164.29. The levy in one village of about 2,000 inhabitants represented a per capita tax of $557.28 for every man, woman and child in the village. Another village levied $320.16; one $263.15; and another $244.91, while the so-called "richest village in the world," the town of Hibbing, had a per capita tax levy for local and school purposes of $222.13 for each of its 15,000 inhabitants. This year, however, an effort was made by the state legislature to curb extravagant local tax levies by placing a per capita limitation on the amount that might be levied for local and school purposes of $160.00. At the same time, the Minnesota legislature increased the state burden upon mines by enacting a law providing for a tonnage tax in the guise of an occupation tax under which there is imposed on persons or corporations engaged in mining iron ore a tax equal to 6 percent of the valuation of all ores mined during the year. The valuation used is the value of the ore at the mouth of the mine, less certain mining and shipping costs. This occupation tax is in addition to the ad valorem tax.

Expressing his opinion that the ad valorem basis of taxing mines is an inequitable basis for taxation, J. C. Dick, formerly chief of the valuation section of the Subdivision of Natural Resources, U. S. Bureau of Internal Revenue, favored the net proceeds method, in force in many of the states, as the best method for taxing mines for state purposes. He spoke against the policy of heavy taxation for conservation, stating that such a policy results in a great deal of ore being left in the mines that otherwise would be brought to the surface. "That is not conservation," he said, "it is waste and that is what the tax laws of Michigan and Minnesota are tending to do."

In discussing the Arizona system, Chas. R. Howe, chairman of the Arizona Tax Commission, stated that the constitution of Arizona is wide open on the subject of taxation, the latest amendment providing that "The manner, method and mode of assessing, equalizing and levying taxes in the state of Arizona shall be such as may be prescribed by law." Upon this point, D. M. Kelly, Montana, said that in his judgment there is too much tendency in some of the states to pass what they seek to term flexible statutes, and that taxpayers' rights are better protected by constitutional provisions that are inflexible and furnish the same yardstick for everyone.

The methods of taxation and tax laws of Colorado, Idaho, Kentucky, Louisiana, Montana, New Mexico, Utah, and Wisconsin were discussed at some length, and there appeared to be no uniformity, either as to rate or measure of valuation. A constitutional article submitted by the Assessment and Taxation Commission of Louisiana to a state constitutional convention this year with reference to the severance tax on natural resources was considered. The article provides that "Severance taxes may be levied on natural resources severed from the soil or water, according to quantity or value, which shall be paid by the owners, at the time of severance, and may be in lieu of other taxes on the property producing the same," and provides further that "no local subdivision shall levy a production or severance tax." The commission in offering this amendment stated that the general property tax does not recognize any economic difference in the value of property, that the severance tax is fairer and much cheaper of administration, and that the state should look to the future as well as to the present and not hamper by taxation the development of any industry that would probably in the future furnish taxable wealth from which a constant revenue might be derived. This report was made after members of the commission had made an exhaustive study of systems and conditions in other states, and an examination of the reports of the various other state commissions by the Tax Division of the American Mining Congress disclosed no other pronouncement of attitude so unbiased and fair toward business.

Among the delegates the opinion seemed to be general that it would be impossible to formulate a uniform plan of taxation which would apply equitably in all states, on account of the great diversity of conditions and the character of the ore deposits in the different states. In many states the ore tonnage can be accurately measured, while in others no estimate would be possible that could be relied upon with any degree of certainty. It was also established that there exists a local prejudice in many states against large mining corporations, non-resident stockholders and owners of mineral properties, and that these are being heavily taxed on the theory that they are taking the natural wealth entirely out of the state and should therefore pay to the state a heavier contribution than that imposed upon other industries. Upon that basis, as stated by Mr. Armson of the Minnesota Tax Commission, "those mining districts are proceeding with the theory of getting it while the getting is good." That such an attitude is wrong in principle and should be condemned was not denied by any of the official delegates. It was the consensus of opinion that the only hope for relief from the excessive burdens of state and local taxation in the immediate future lies in sincere co-operation between state and local authorities and the taxpaying public. The attitude of mining men was ably expressed by Judge E. C. Stimson, Colorado, who said that the suggestion that taxpayers should treat government agents as honest men, called for the suggestion that government agents should treat taxpayers likewise. "Most of us," he said, "are perfectly willing to perform our civic duty even though it be at some sacrifice to ourselves. Most of us are anxious to bear the burden of citizenship and bear it properly and bravely and honestly. We are more than glad to respond to any reasonable demand that may be made upon us, but we want to be treated fair and handled at least with as much consideration as is received by others in the same situation."

Recent developments in federal tax legislation were outlined by George E. Holmes, New York City, who explained the provisions of the new revenue bill and proposed changes which will affect the mining industry if the bill becomes a law. Other bills which, if passed, would constitute a serious blow to owners of mineral properties were discussed. The uncertainty which exists on account of the great divergence of opinion among members of the Senate concerning many of the provisions of the new bill is seriously retarding the efforts of business to get back to normal conditions. There is a tendency of certain political groups to endeavor to secure special advantages for particular classes or localities rather than to follow a broad constructive policy of agreeing upon measures which will benefit the country as a whole and which will apply to all classes and localities alike in proportion to the tax burden which each class or locality is carrying. This was cited as being contrary to the principles of equity and justice which should govern in working out a program which will stimulate and revive industry.

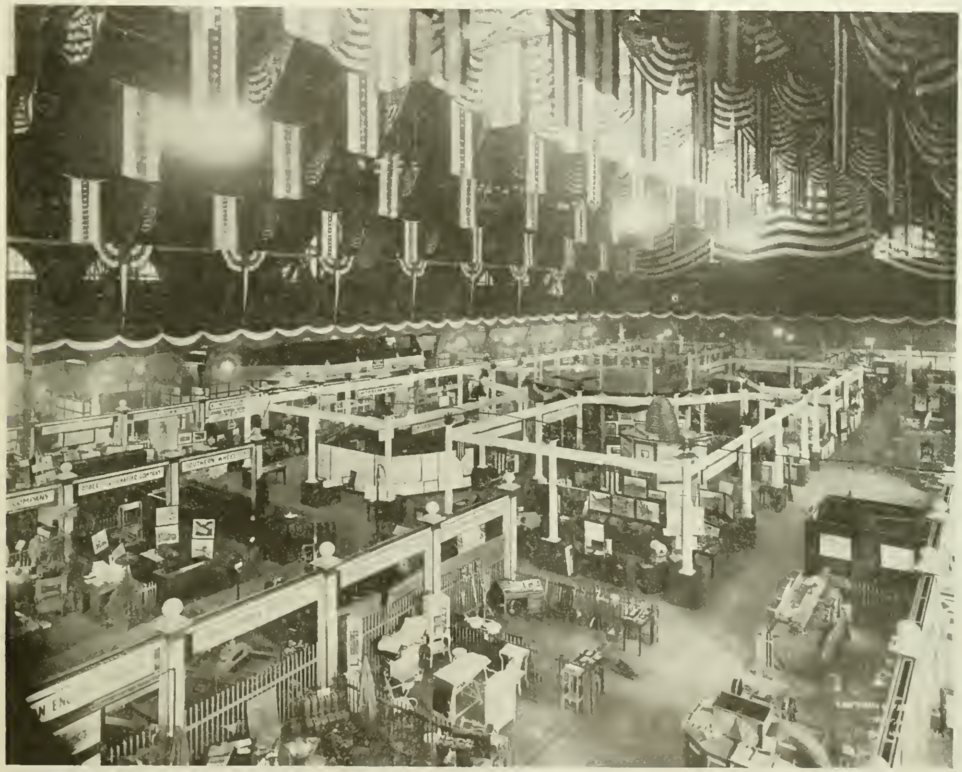
A feature of the conference was a paper on taxation of mines and mineral lands in Mexico read by Senor L. de Silva, appointed as a delegate by President Obregon to represent the government of Mexico. Senor de Silva described the various methods of taxing mines, and presented some very interesting data concerning the natural wealth and resources of that country. "A mining property under Mexican law," he said, "is a group of mining *pertenencias* covered by one mining title. According to the Mining Tax Law, enacted June 27, 1919, there are three kinds of taxes, first, on the mining property; second, on the metals produced; and third, or smelting, assaying and coining. The first one or tax on mining property or Mining Tax, is an annual rate paid on each mining claim unit; the mining claim unit is the *pertenencia*, say a prism of indefinite depth whose outer base is a square, one hundred meters to each side, or ten thousand square meters." He stated that the tax tends to limit the control of great extension of horizontal area, by one single individual or corporation, because the annual rate per claim unit increases in proportion to the number of *pertenencias* owned by a single individual or corporation.

Some very excellent contributions were made by all of the delegates during the discussion and a full record of the proceedings will be published with the general proceedings of the convention. No plan of uniform taxation of mines was proposed, but the conference adopted resolutions providing for the appointment of a committee of ten members to collaborate with a special tax committee appointed by the American Institute of Mining and Metallurgical Engineers to investigate the taxation and revenue systems of the various mining states and make a joint report of their study and research. This report will be published for the information of legislative bodies and mine taxpayers throughout the United States.

NATIONAL EXPOSITION OF MINES

"AN UNQUALIFIED SUCCESS," was the comment made by every exhibitor and visitor at the National Exposition of Mines and Mining Equipment, held all during convention week at Chicago. Approximately 150 exhibitors, embracing the majority of those who deal with mines, held a meeting on the last day and voted unanimously to participate in the next exposition.

Almost every conceivable kind of mining machinery and equipment was seen during the week. Each piece of machinery was displayed in an artistic manner in a decorated booth, while most exhibits were in full operation.



CENTER SECTION OF THE NATIONAL EXPOSITION OF MINES

Wednesday night of convention week an exhibitors' smoker was held at the Coliseum. There were a few more than 1100 in attendance, and practically every one of them was a foreman or superintendent or other employee of a coal mine. Those in attendance were guests of the exhibitors, and it was the opinion of the latter that no greater opportunity for calling attention to their wares had ever been presented.

The smoker was made the occasion for having a genuine good old time. Ralph Becker, the chairman of the Smoker Committee, arranged an entertainment program which was superior to the bill offered at any Chicago theater. For more than a month before the exposition was held he worked to increase attendance with results which will long be remembered by the exhibitors, by the operators and the other members of the American Mining Congress.

A feature of the entertainment of the smoker was the appearance of a vocal sextet of coal miners from the Hudson Coal Company. On the second day of the exhibit, when it was seen that the exposition would be a success and that the capacity of the banquet hall during the smoker would be taxed, D. F. Williams, vice president and general sales manager of the Hudson Coal company, wired to the home office to send on the sextet at the company's expense. They arrived just before the smoker and at once became the center of attraction, and they held the spotlight during the remainder of the week. The members of this sextet were Perry Scriven, bass, who was also the manager, Tom Weaver and George Weaver, leads, Joe Wetter, baritone, Marty Size, bass, and Steve Mackeral, first tenor. They were accompanied on the piano by Clay Bowland. Mr. Bowland is their regular accompanist back in the Pennsylvania mine fields.

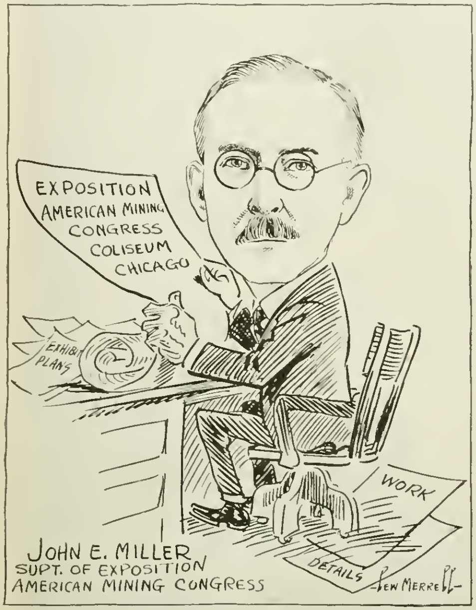
The big entertainment feature of the entire exposition was, of course, the police band from Mexico City conducted by Senor Campos. This band was brought to the exposition by Luis N. Rubalcaba, Assistant Secretary of Commerce and Industry in the cabinet of President Obre-

OFFICIAL EXHIBITS ON THE PLAZA OF STATES

gon. It contains 96 pieces and has been pronounced by Toscanini one of the best bands in the world. The coming of this aggregation of famous musicians was not known in advance. When they paraded down Michigan Avenue both the public and the Mining Congress received their first intimation that they were in the city. They marched to the Coliseum on Friday afternoon, entered and took seats unobtrusively in the balcony; no one knew they were present until they struck up the tune of LaPaloma, whereupon everybody in the exposition forgot that anybody else or anything else was present.

The Mexico City Police Band is the official band of the President of Mexico and occupies the same status in the capital of that Republic that the Marine Band receives in Washington. Its appearance in Chicago was not only a tribute to the Mining Congress which was deeply appreciated, but a very manifest indication of the desire of Senor Rubalcaba and his chief, President Obregon, to increase business between Mexico and the United States.

The center of the Coliseum was given over to the exhibits of Mexico, Alaska, the United States government and various western states.



The California exhibit occupied the northwest corner of the Plaza and contained a complete showing of all the mineral resources of the Golden State, of which about fifty are produced in commercial quantities. This exhibit was in charge of Walter E. Bradley, mining engineer, who was assisted by Mrs. Bradley. A feature of the display was a special display of gold, platinum and diamonds shown in a specially constructed and lighted safe. This safe contained minerals valued at $30,000 and was guarded day and night by detectives.

Another attraction at the California exhibit was a large block of wood painted to resemble gold, containing 65.8 cubic feet. An amount of gold equal to this space has been produced in California upon the average every year for the last 72 years. A block of gold this size would weigh 39½ tons and be valued at $23,891,918.

The attractiveness of the exhibit was added to by numerous portraits and likewise by charts of the state's mineral resources.

The center of the Plaza of States was occupied by the Alaskan exhibit, which was arranged by the territorial government and the Alaska bureau of the Seattle Chamber of Commerce in co-operation. J. L. McPherson, secretary-manager of the Alaska bureau of the Seattle Chamber of Commerce, was in charge and was assisted by John Ronan of Hyder, Alaska, and Stephen R. L. Foster. Mr. Foster, who was an Alaskan miner for fifteen years, entertained thousands of people during exhibition week by panning gold. This process was, of course, new to Chicago, and, in fact, to the vast majority even of the visitors to the exposition, and was, therefore, very interesting.

The Alaskan exhibit was notable in that it was the first comprehensive showing which has ever been made of all of the resources of the territory. A sign conveyed the information that there are 100,000 square miles of agricultural lands in Alaska, while jars of preserved vegetables, exceedingly tempting to the eye, showed that some of this fertile territory has been utilized. There were cans of salmon, big jars of herring, and the whole side of the wall was ornamented with shocks of wheat. There were samples of wheat and blocks of coal from the Matanuska and Bering fields.

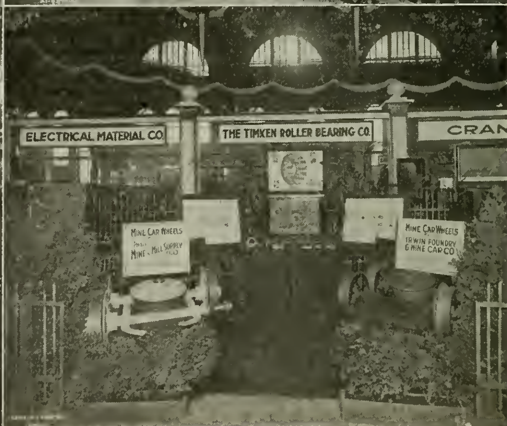
The Alaskan exhibit was so big that it overflowed and utilized part of the space occupied by the United States Bureau of Mines. M. F. Leopold, of the Bureau of Mines, was in charge of the Alaskan exhibit until Mr. McPherson arrived.

The first exhibit to attract the eye on the Plaza of States immediately to the right of the entrance was that of the Lake Superior Iron Ore districts. In the center of the exhibit was a large model of the Norman mine, in the Mesabi range at Virginia, Minnesota. There were many samples of ore from the Mesabi, Vermilion and Cuyan ranges of Minnesota, others from the Gogebic range of Michigan and Wisconsin, and still others from the Menominee and Marquette ranges of Michigan.

Blocks of peat in the Lake Superior exhibit attracted considerable attention throughout the week. A sign conveyed the information that there are in Minnesota alone 5,217,000 acres of peat, or 6,835,300,000 tons, or more than half the estimated supply in the United States. Peat by-products were contained in glass cases.

The exhibit also contained a complete model of an

underground mine with drift, hoist and shaft and all the machinery in working order. Some very excellent art work contributed to the attractiveness of the exhibit. One of the photographs was that of the Hull-Rust mine at Hibbing, the greatest open pit mine in the world. Many millions of tons of ore have been taken from this mine, and the hole which has been dug is the largest man-made hole on the face of the earth. At its deepest place

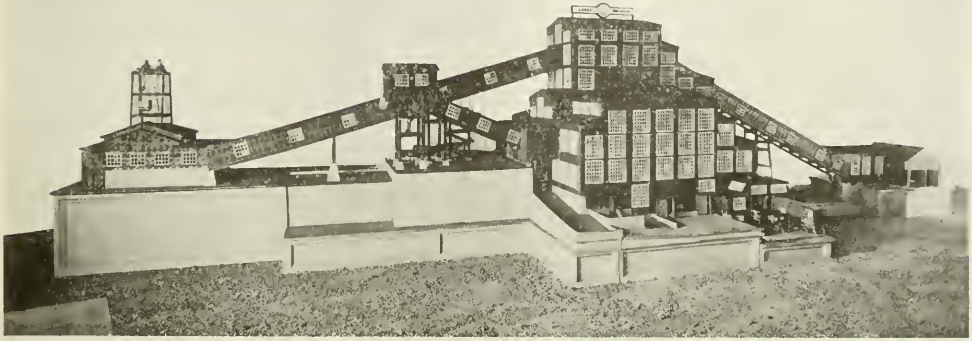


it is 200 feet deep, and it is one mile wide and two miles long.

The Lake Superior exhibit was in charge of F. A. Wildes, superintendent of state mines of Minnesota, and J. P. Funk, of St. Paul.

The exhibit also included a complete model of the mines experiment station of the University of Minnesota.

All visitors to the exposition were attracted to the Utah exhibit, but those who went into the balconies were attracted at once. That was because the exhibit was in the form of a panorama surmounted by a bee-hive—an emblem of the industry of the state. Everyone's atten-



THE WORLD'S LARGEST COAL BREAKER

A working model of the Loree Coal Breaker was exhibited at the National Exposition of Mines by the Hudson Coal Company. One side was left open, showing the machinery in operation. The exhibit was the costliest one at Chicago and was one of the many which held the crowds throughout the week.

tion was, of course, attracted to the beehive. Close inspection of the panorama showed that the emblem was appropriate. The State University, Salt Lake City, the Grand Canyon, Bryce Canyon and other scenic places were shown on transparencies; also a photograph of the Utah copper mine taken from an airplane especially for the National Exposition of Mines and Mining Equipment. There was a picture of the largest open cut copper mine in the world, showing an entire mountain diappearing under tax upon the mining industry, and an illuminated map illustrating Salt Lake City's central location with respect to the western metal mining industry, and numerous balloptical views of copper operations. The exhibit also included specimens of oil shale and oil shale products.

The University of Illinois exhibited a complete model of the grounds and buildings covering 100 acres at Urbana and Champaign.

The Colorado exhibit was featured by a display of the operations of radium, for which a dark room had been constructed. The salts of this precious mineral and facsimile representations thereof gave an adequate idea of just how small a quantity of radium can call for the expenditure of $50,000. Radium exhibitions were given without interruption during every afternoon and evening during the exposition, and there was always a waiting line in front of the door.

The Colorado exhibit included a complete showing of all the minerals found in the state, together with mineral waters and artistic specimens of Van Briggle pottery, for the manufacture of which the State has become famous.

M. B. Tomblin, secretary of the Colorado Metal Mining Fund, was the officer incharge both of the collection and arrangement and display of the exhibit. M. J. Collins was directly in charge of the exhibit itself, and was assisted by H. F. Lunt, State Commissioner of Mines, and other Colorado citizens who attended the convention.

Perhaps the most gaily decorated exhibit in the Coliseum was that of the Republic of Mexico. It contained specimens of every mineral substance mined in the Republic, attractively displayed beneath the Mexican colors and the outspread wings of the Mexican eagle. Ign. Orozco was in charge and was assisted by Ign. Silva, Mr. Lambarrie, Mr. Yzaguirre Jr. and Miss Esther Huerta.

Scientists who attended the exposition were very enthusiastic in their remarks about the Mexican exhibit. Ray W. Arms, assistant professor of mining engineering at the University of Illinois, was so pleased with the display of Mexican minerals that he called the attention of his entire student body thereto and invited them to visit the Mexican booth, which most of them did. Henry W. Nichols, assistant curator of geology of the Field Museum, also stated that he found the Mexican exhibit exceedingly interesting.

A page could easily be written about every exhibit in the Coliseum. The following condensed descriptions will give an insight into the amount of time, money and thought expended in making the Exposition successful.

American Car and Foundry, New York City.—This company featured a steel coal mine car running on a track, this car being equipped with Hyatt bearings and being of the rotary dump type. A full line of mine cars and mine car equipment was contained in the booth, as well as roller bearing wheels, taken apart to show the construction of each part, road building cars, automatic dump boxes, mine car trucks, wheels, roller bearing parts, and automatic couplers. Edmund D Buick was the head of the company representatives present.

American Manganese Steel Company.—A miniature model of an improved type of gold dredge bucket line was in operation, the principal feature of the design being that the buckets fit the contour of the round lower tumbler, yet also provide for a straight surface to fit on the hexagonal upper tumbler.

Engineers and miners were also impressed with the points of merit

of the Missabe-Vanderhoef shovel-dipper model, and the interesting display of AMSCO manganese steel mine car wheels, teeth, screen plates, crusher parts, tube and ball mill liners, pulverizer parts and steam shovel repairs made at their Chicago Heights, Illinois, New Castle, Delaware, and Oakland, California, plants.

American Mine Door Co., Canton, O.—The exhibit consisted of an automatic mine door and an automatic switch thrower, both devices being installed on a track the same as operated in the mines. A locomotive running back and forth on the track demonstrated the operation of these devices.

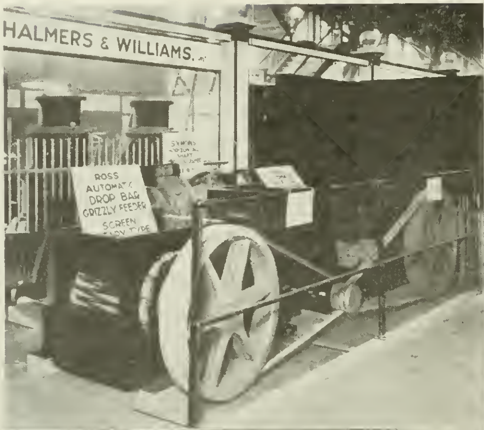
The automatic door extended diagonally across the track and consisted of two wings which swung in unison in opposite direction as the locomotive approached the doors, and closed immediately after the locomotive passed through, the action being positive and rapid.

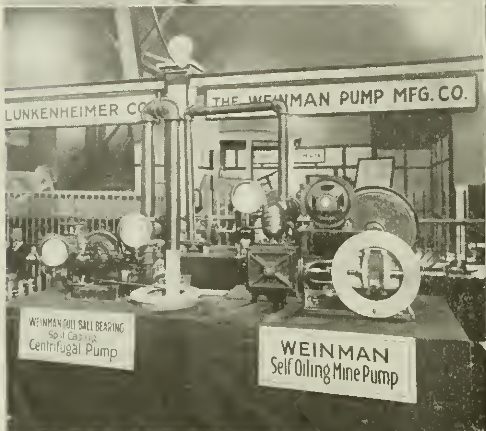
American Steel & Wire Company, Chicago.—The majority of this exhibit consisted of wire rope of all kinds, sizes and types of construction for coal mine equipment. Cables for mine machinery and electrical equipment were also on display, and rail bonds with an arc welding machine for this kind of work on mine tracks were exhibited. Representatives of the company, headed by B. H. Ryder, demonstrated these products, explaining the wire pulling process and the mesh weaving of wire rope used in coal mines.

Atlas Car & Mfg. Co., Cleveland.—The exhibit of the Atlas Car & Mfg. Co. consisted of two storage battery locomotives, one provided with combination features for operating from the trolley wire as well as the storage battery. One machine was of the high type, being 45″ high; the other was 32″ high over all and suitable for operation in thin seam coal.

A feature of this exhibit was a driving unit from one of these locomotives, which was partly dismantled so that the actual operation could be seen. This unit was in actual operation from a single cell storage battery showing the low frictional losses involved in a drive having ball bearing mountings.

Automatic Coal Mine Equipment Company, Chicago.—This firm acts as sales agents for the Dinwiddie Steel & Manufacturing Company of Smithboro, Ill. Demonstrations were given in the Coliseum annex with the Dinwiddie automatic mine door by T. J. Casey, vice president and sales manager. This door always opens away from the load, and because of a hinged panel at the





bottom, cannot be blocked by coal falling on the track. A model of this door was set up on a track over which mine trains were passing.

Automatic Reclosing Circuit Breaker Co., Cleveland.—This exhibit consisted of four Automatic Reclosing Circuit Breakers, ranging in capacity from 800 to 8,000 amperes; one 5 H. P. 220 volt, type "SS" Automatic Starter; Overload Time Limit Relays and bearing thermostats. The breakers and starter were wired up so that the operating characteristics could be readily explained and demonstrated. The features of the automatic breaker that were brought out in these demonstrations were: (A) minimum loss of power, due to breaker being open. (B) why the breaker will not reclose on short circuits. (C) practical elimination of substation attendants. The feature of type "SS" Starter was the limiting of current to full load of motor. The bearing thermostat features were its simplicity of installation and positiveness of operation.

The Bastian Blessing Company, manufacturers of the well known line of Rego welding and cutting equipment, demonstrated its apparatus at booth No. 148. Complete units for all ranges of work within the limits of the oxy-acetylene or oxy-hydrogen process were shown. The torches were operated to show the automatic perfect flame adjustments and the non-flash back feature. The ladies were particularly interested in the toy balloons given away at the booth which were filled with hydrogen gas.

Frank S. Betz, Hammond, Ind.—First aid equipment for use in mine accidents was displayed here. Specimens shown included medical supplies, sterilizers, service station equipment, hospital beds, stretchers, white enamel ware, operating room equipment, bandages, washstands, sinks, operating tables, and hospital plumbing. H. B. Bengson personally demonstrated the use of first aid equipment during the entire convention week.

The Buckeye Blower Company, Columbus, Ohio.—The exhibit consisted of a 48″ Buckeye disc booster fan; a small cast iron volume blower direct connected to a 7½ H. P. self-starting Triumph Motor operated by Cutler Hammer Push Button Control; also, a large Buckeye reversible multiblade mine fan, which permits either exhaust or delivery of air, according to position of the dampers. All three of these fans were in operation and they attracted considerable attention. The booth was in charge of Wm. I. Lawson, sales manager, from the factory, and their western manager, W. J. McEvoy, with office at 324 Monadnock Block, Chicago, Ill.

Buffalo Forge Company, Buffalo.—This company makes a specialty of mine ventilation. Among the lines displayed were electric blowers, the Niagara conoidal wheel, Dyplex wheel, steel pressure blowers, disc fans, Buffalo spray nozzles to settle poisonous dust in mines, hose, steam and centrifugal pumps, slow speed fans, air washers, condensation pumps, gas and fume exhausters, reversible exhausters, blast wheels, Buff self-aligning oil ring bearings, countershafts and ventilation tubing. The Buffalo Forge ventilators were equipped with DuPont Ventubes made by the DuPont company of Wilmington. C. C. Cheyney had charge of the display booth.

Car Dumper and Equipment Company.—The feature of this exhibit was a working model of the Solidcar self-dumping cage, which is automatic in operation. Coal, placed in model cars, was carried by this dumper into a cage, which raised, dumping the coal. A mechanical spragging machine and a rotary car dumper were also exhibited. Photographs and blue prints of installations and construction of all models were on display in this booth. Arthur M. Simpson was in charge of the exhibit.

Cement-Gun Company, Cornwells Heights, Pa.—This company exhibited two air compressors, one motor driven type and gasoline, both of a portable type. The Cement-Gun has proved a very efficient aid in mines, sealing the rock from the air and moisture and preventing scaling and falls. J. M. Crom was in charge of the booth.

Chalmers & Williams.—This display featured the "Ross Automatic Drop Bar Grizzly Feeder and Screen" in the rotary and traveling types; also the "Symons Disc Crusher." Chalmers and Williams manufacture and sell these machines under exclusive patents and licenses and, in addition, a general line of modern rock crushing, screening and feeding equipment. The Ross automatic drop bar Grizzly feeders and screens were operated to show the alternating bars dropping away at the bottom, the feature which insures the screened material unimpeded passage through the drum or returning aprons and also automatically cleans the apertures, or openings, between the bars of any material that might be inclined to wedge.

H. Channon Company, Chicago.—This exhibit embraced a full line of mine equipment and supplies manufactured by various companies for which the Channon Company is agent. Included in this lay-out were power pumps, steam pumps, picks, shovels, clothes hangers, hose, jacks, fire extinguishers, miners' camps and lights, car movers and spotters, portable electric coal drills, and blacksmith shop and maintenance shop tools, repairing equipment and supplies.

Chicago Chemical Co.—The Chicago Chemical Co., 20 E. Jackson Blvd., Chicago, exhibited two of their products, viz., Colline Boiler Compound and Batrylife. Colline is a universal compound which is guaranteed to work successfully in any type of boiler with any kind of water. It removes old scale, prevents new scale from forming, prevents priming and foaming, and rust, pitting and corrosion of the boiler metal. Batrylife is an electrolyte which supplants sulphuric acid solution in lead storage batteries. It prevents destructive sulphation of batteries due to overheating, prolongs the life of the battery, will not freeze, charges more quickly, holds charge longer, and will not rot battery box or frames.

Chicago Mining Sheave & Roller Co.—An interesting exhibit was that of the Chicago Mining Sheave & Roller Co. in booth No. 138. The sheaves, used on horizontal curves, are made in several sizes, the base and roller being constructed of cast iron but the core of the strongest steel, featuring a double-bearing, oil running, frictionless type. The rollers, used on main lines, are also made in several sizes, featuring oil reservoirs, double-bearing, frictionless, heavy construction. Mr. Andrew Bandura, president of this concern, will be pleased to answer any inquiries. Address him at Chicago Mining Sheave & Roller Co., 2320 Chicago Ave., Chicago, Ill.

Chicago Pneumatic Tool Company, Chicago.—This company exhibited time saving electric coal drills, air drills, the Boyer riveting hammer for mine construction work, mounted and unmounted drills and a full line of power tools. F. E. Taylor was one of the company representatives at the convention.

Columbian Steel Tank Company, Kansas City, Mo.—This company featured a Lightning Motor Motive hand hoist truck equipment for rapid dumping. This body and device is made without rivets and has a patent tail gate that hinges at either top or bottom. By shifting a clutch the body can be hoisted or lowered, the power for raising being supplied by the motor. This equipment is built for all sizes of trucks, from one to ten tons. Bolted tanks for storage and a line of truck and tank equipment were also contained in the exhibit. J. S. Foley was one of the company representatives with this exhibit.

Eagle Iron Works, Des Moines, Ia.—This company exhibited the Olson automatic self-dumping cage, demonstrating with a working model.

Electric Materials Company, Chicago.—This exhibit contained a "Hold Heet" space heater for heating isolated rooms and passages in mines, V. V. safety switches, cast iron water proof switches, trolley harps, rail bonds and other electrical mine equipment. The demonstration was in charge of William Finlay

Edison Storage Battery Company.—Three storage batteries rigged in a machine which bumped them together every two seconds gave visitors to the exposition a good insight into the quality of Edison storage batteries. There was also shown a full line of storage batteries of all types, and a lighted display of batteries in actual use in coal mine locomotives. Fred Jago met the visitors.

Electric Railway Improvement Company, Chicago.—This company deals in rail bonds and arc bond weldings, which were demonstrated in the booth. Erico arc weld rail bonds, Erico portable welding machines, and a complete line of equipment for this work were displayed, showing several types of machines for arc welding. Of considerable interest and attraction were the demonstrations of an operator working under a glass case welding rail

bonds, and the representatives of the company were able to show the proper way for work of this kind to be done.

Electric Service Supply Company, Chicago.—This company exhibited a full line of all types of electrical mine equipment, including overhead materials of all kinds, mine telephones and signals, locomotive headlights, turbo generators, Segur coil winding machinery, high tension insulators and fuses, Keystone triangle arms, switchboards, miners' lights, and kindred lines. H. H. Johnson was the head representative in charge of the exhibit.

Fairmont Mining Machinery Co.—In its exhibit the Fairmont Mining Machinery Co. relied largely on models for demonstrating their various types of coal mine equipment. Their power coal augur, portable pump, box car loader and other installations were shown in this way, but the working model attracting perhaps the greatest general attention was that of their car retarder. In the Coliseum Annex, Fairmont steel ties were used exclusively in setting up the track on which was run the locomotives and mine cars manufactured by exhibitors. Fairmont complete coal mining installations were graphically shown by large panels made of up framed photographic enlargements.

Federal Electric Co.—The Federal Electric Company, 8700 South State Street, Chicago, Illinois, had in its booth No. 143, an exhibition of electrical products which proved extremely interesting. Their large double head Type B electric siren, it was explained, is used by big coal companies such as the Peabody Coal Company, as a starting and stopping, and as a general arlam, signal. The small Type A Federal electric siren is used in conjunction with breakers and as an emergency alarm, and in the small mines, as a starting and stopping signal. Other items on display were the National Multiphase time-limit renewable fuse and the Federal electric lantern with new rechargeable dry battery.

The Fibre Pipe Co.—Bermico Fibre Pipe, displayed for the first time before the Mining Congress at the Coliseum in Chicago, has many qualities that make it suitable for mining work. It is put together like iron pipe, being threaded, with screw couplings, and will stand the same abuse. There is no contraction or expansion, it will not rust or corrode, handles acids, stands high pressures, is a wonderful insulator and weighs about one-third as much as iron pipe. It is also moisture proof. This pipe is being put on the market by the Fibre Pipe Company, 421 Board of Trade, Indianapolis, Ind., and is furnished in sizes from 3 to 12 inch, inclusive, smaller sizes following later.

The Flexible Steel Lacing Company of Chicago exhibit, in charge of their sales manager, H. L. Coats, showed their well known Flexco-Lok lamp guards, Alligator steel belt lacing and their High Duty fasteners. The latter are especially designed for use on heavy conveyer belting and, though tested in field service for several years, the samples of this joint in belting from six up to fourteen ply attracted much attention, as it presented features new to many engineers. To those who did not register for a copy of their hand book, "Short Cuts to Power Transmission," a copy will be sent on request.

Fulton-Kenova Mine Car Company, Fulton Canal, Ohio, and Kenova, W. Va.—This was one of the largest exhibits at the Coliseum. Two cars, one a five-ton mine car of wooden construction, and the other a two-ton steel car, were shown. Likewise all kinds of hitchings, couplers and bumpers and mine car equipment. The dump mechanism of the two types of cars were explained by W. H. Taylor and other representatives of the company.

General Electric Company, Schenectady, N. Y.—This company had a large exhibit of pictures of its equipment in electrical machinery, locomotives, hoists, generating equipment and other lines of mine machinery. G. F. Marble was in charge of the booth.

Goodman Manufacturing Co.—Models of modern electric mine locomotives were shown at the Goodman exhibit. The locomotive which attracted much attention was equipped with transverse equalizers. Severe obstructions and depressions were placed on the track and because of the action of the equalizer the locomotive traveled along as though the track were level. Enlarged operating views of locomotives and mining machines were also shown. The Goodman factory, located in Chicago, held an "open house" and welcomed many delegates and guests of the Mining Congress. The visitors saw mining machinery in various stages of construction and also witnessed the operation of improved machines and locomotives.

Gould Storage Battery Company, Chicago.—Various types of cells and batteries were exhibited by the Gould Storage Battery Company. Rubberized separators, a compound of wood impregnated with rubber, which renders the separators acid resisting, were featured. There were also shown storage batteries designed for American submarines. M. E. Pipkin was the company representative at the exposition.

Hazard Manufacturing Company, Wilkes-Barre, Pa.—This company had on display samples of all sizes and strength of wire rope and insulated wire of every type which is manufactured by it. The various materials used in the construction of each product also constituted a part of the exhibit, giving it an educational tone. W. S. Hart was the company representative at the booth.

Hercules Powder Company, Wilmington, Del.—Explosives of all types for mine blasting were on exhibit, including dynamite, blasting powder, caps, electric blasting, fuses, squibs, electric squibs, tamping bag and flotation oils that are by-products of the explosive industry. The raw materials used in the manufacture of the various kinds of explosives were displayed, which gave an educational note to the display. Enlarged photographs of big blasting operations in various kinds of coal mining were shown. N. S. Greensfelder had charge of the display.

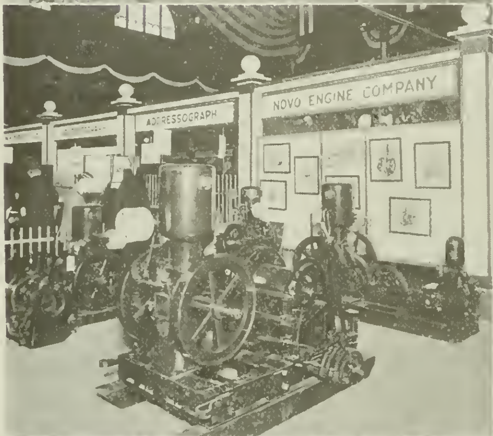
Hockensmith Wheel & Mine Car Company, Penn Station, Pa.—The feature of this exhibit was a mine car on the track equipped with Hyatt roller bearing wheels, mounted with a single angle bar construction. This car was also equipped with a Eureka oiling device. There was also exhibited a double angle bar truck mounted on a section of a wood car bottom. C. L. Herbster represented the company at the exposition.

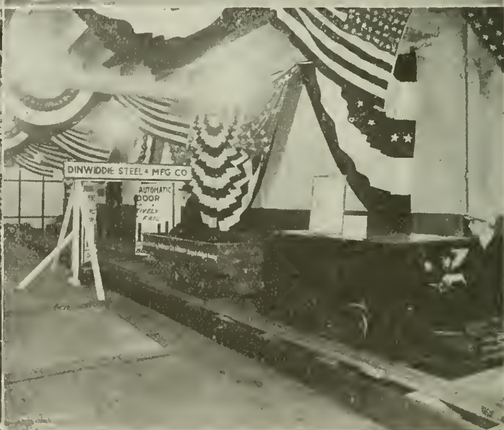
Robert Holmes and Brothers, Danville, Ill.—A full line of mine machinery was exhibited by this company. One of the features was a working model of the Helical adjustable end loader for filling cars from the mine tipple. Another working model in the display was of an automatic car lift operated by compressed air. A supersheave wheel measuring 7 feet in diameter with the lighter, a Danville hoisting engine, post-type brakes, bored guides and crossband, all kinds of sheave wheels, mine cages, screens, chutes, hoppers and feeders were included in the exhibit. F. R. Holmes was in charge of the booth display.

Hudson Coal Company.—The costliest exhibit in the Coliseum was that of the Hudson Coal Company of Scranton, Pa. It consisted of a full working model of a Loree No. 5 breaker such as is in operation in the company's mines. The cost of this exhibit was $5,000. Among those in attendance at the booth during the entire exposition were D. F. Williams, vice president and general sales agent of the Hudson Coal Company, and the designer and carpenters who built the model. The original breaker stands 140 feet or approximately 10 stories in height. It contains four sets of crushing rolls, 60 decks of shakers containing 5,400 square feet of screening surface and 44 jigs. Approximately 2,700 mine cars containing $2\frac{1}{2}$ tons of coal is dumped at the colliery daily, and the Loree breaker performs every manufacturing function from separating the coal from the rock to discharging the coal of various sizes into the railway cars. This company also exhibited a miniature reproduction of the anthracite coal fields beneath the surface, showing just how the coal had been taken out and the character of supports which are left. This was done for the purpose of explaining why the surface in the anthracite coal regions sometimes sinks. Thousands of people studied this exhibit during the week.

The Hyatt Roller Bearing Company, New York City, had a very instructive display of bearings suitable for use on mine cars, belt conveyors, storage battery and trolley locomotives, line shafting and numerous other uses. Two complete Hyatt equipped conveyor stands of the troughing type with return idlers were on display. H. K. Porter was in charge of the exhibit, other Hyatt men in attendance being D. Giesen, manager Industrial Bearings Division; V. C. Gemm, conveyor bearing expert, J. E. Graham and L. A. Shea of the Mine Car Department.

Ironton Engine Company, Ironton, Ohio.—Storage batteries for use in mine locomotives, switchboards, rheostat charging ma-





chines, and Ironton duplex combination mine locomotives were shown. Pictures of Ironton installations were included in the exhibit. The storage battery locomotive was in actual use during the exposition. C. W. Chappelle was the representative.

Jacobsen & Schraeder and the Krehbiel Company, Chicago.—These two companies had adjoining spaces, and showed a complete line of all types of mining machinery, including, in addition to blowers and ventilators, coal tipples and handling plants, screening and storage plants, elevating and conveying plants, coal docks and screens. A small working model of a table screen was part of the exhibit. A large number of enlarged pictures showing Krehbiel and Jacobsen and Schraeder installations completed the display.

J. D. Brendel was in charge of the exhibit. The Ilg Ventilating Company also exhibited here the Ilg universal high pressure blower, and a complete line of blowers and ventilators for mines. All of these lines are used with tubing to supply air to remote entries.

Jeffrey Manufacturing Company, Columbus, Ohio.—This company exhibited a complete line of coal mining machinery, consisting of electric and compressed air cutting machines, electric locomotives, mine fans, retarding conveyors, crushers, pulverizers, shredders, car-unloaders, elevating and conveying machinery, wagon conveying loader, drop forge and heat treated parts for all machinery, tipples, hot pressed armature coils and other lines. The booth contained photographs on installations of all of these lines, and literature and booklets of the company were among the most attractive and artistic distributed at the convention. C. E. Fetherolf was the company representative.

W. A. Jones Foundry & Machinery Company, Chicago.—All styles of speed reducers, spur gear countershafts of all styles, friction clutches, worm gear reducers of various kinds, cut gears of all kinds, and a full line of mine shaft equipment and power transmission machinery were exhibited by this manufacturer. J. W. Hildebrand was among the representatives who was assigned to demonstrate the work at the Coliseum.

Keystone Consolidated Publishing Company, Pittsburgh. R. C. Becker, vice president of this company, was among the representatives of the Keystone Company who attended the convention. Mr. Becker was a member of the entertainment committee of the convention, and through his work the rousing smoker on Wednesday evening was made possible. The company had in its booth copies of its three last editions of its publications, The Coal Catalogue, The Mining Catalogue, Coal Edition, and The Mining Catalogue, Metal Edition. In the mining field, these books are quoted as standard authorities.

Keystone Lubricating Co.—The exhibit consisted of a mechanically operated display illustrating the various ways and means of applying Keystone grease to machinery bearings. Included in the exhibit were specimen bearings of the Hyatt Roller Bearing type, the S. K. F. Ball Bearing type, the Timken Roller Bearing type and the solid roller bearing type, and other exhibits illustrating the successful methods of the Keystone grease system of lubrication. These exhibits are inclusive of the general class of machinery on which the Keystone Lubricating Company guarantees a reduction of 10 percent in the cost of lubrication where the Keystone method is employed.

Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio.—This company, by use of large colored photographs, exhibited its full line of mine cars of all types, steel and wood, automatic dump.

Lake Superior Loader Company, Duluth, Minnesota.—Demonstrations were given by this company with their "Shuveloder", set up on a track. This machine does mechanical mucking and is used for underground work in coal mines in tunneling and mucking blasted coal. It is air-operated and can be run by one man, with a maximum continuous operation record of 45 tons an hour. Pictures were also exhibited showing the various types of mucking work done by the "Shuveloder." F. N. Wilson demonstrated the machine.

A. Leschen & Sons Rope Company.—This company had on display operating models of two distinct types of their aerial tramways. One model was a reproduction of an actual Leschen tramway installation in West Virginia, used for carrying coal from mountain-side mine to railroad across a river. It is known as their Single Span Gravity Two-Bucket System. The other model represented in a general way the Leschen automatic system, and this model was made to show particularly the automatic loading and dumping devices rather than a complete installation, as oftentimes this system is used for long hauls. There were also samples of Leschen wire rope for all mining work, including Hercules (Red-Strand) wire rope, patent flattened strand wire rope, locked coil cable, and ropes of standard round strand construction. A. Leschen & Sons Rope Co. reports that many live inquiries for their products were originated by their exhibit.

The Lima Locomotive Works, Lima, Ohio.—This company's exhibit consisted of a set of framed photographs displaying fully the Lima steam locomotives, which are used for all types of industrial operations. All Lima engines are Shay-geared locomotives and are built for heavy work over steep grades and on temporary track. The four-wheel drive type with the gearing direct from the cylinders is the popular type for coal companies. They are built for all gauges of track and in sizes from 10 to 150 tons. S. W. Baker was among the representatives of the company at the Convention.

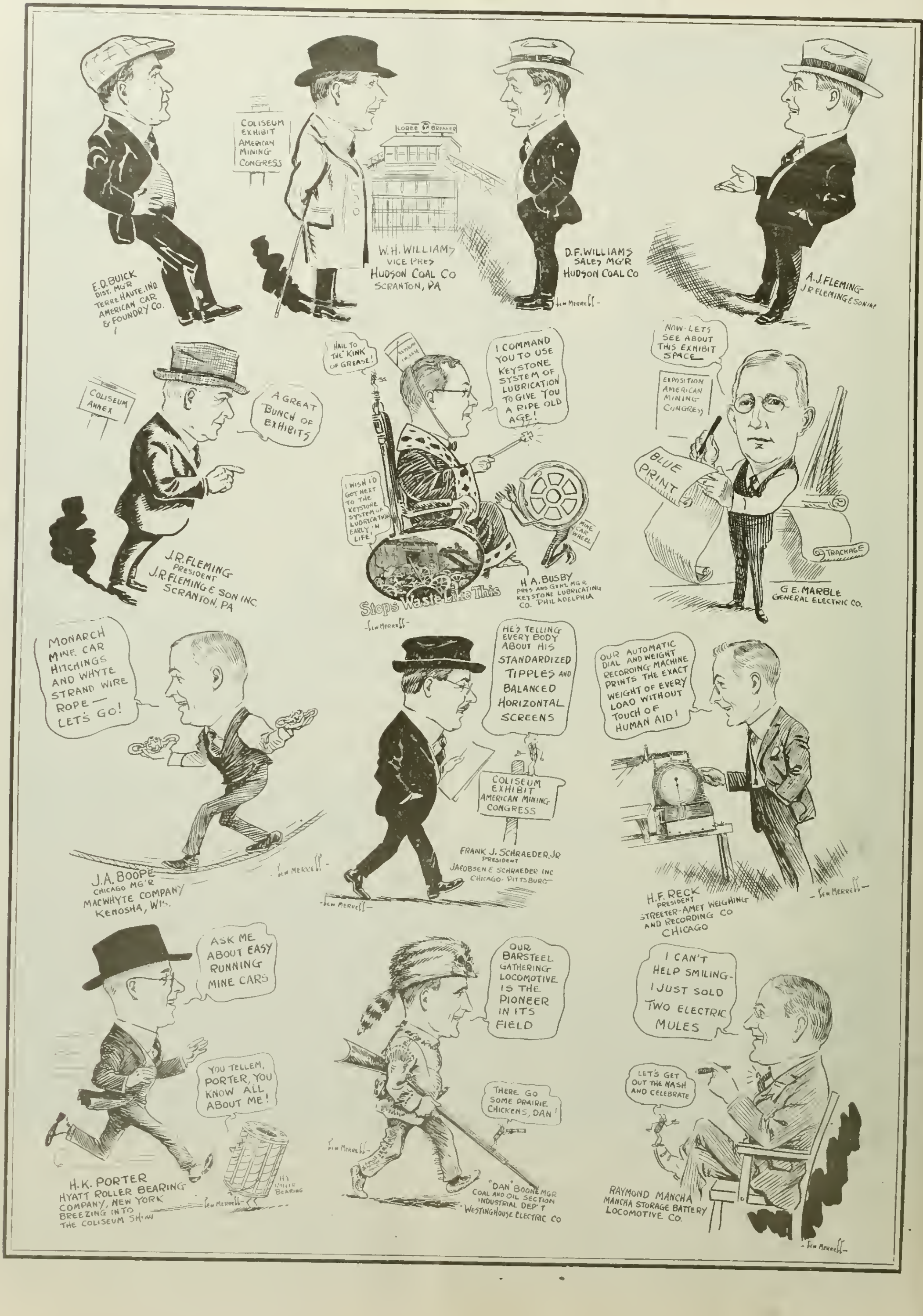
Lincoln Steel & Forge Company.—The company was represented at the exposition and convention by Frank S. Barks, president; Geo. B. Bell, Jr., vice president; A. P. Fox, chief engineer; H. W. Richards, sales manager, and P. H. McGauley, advertising manager. Its principal exhibit was, of course, the Lincoln Self-Aligning Journal Box Truck. A display was made of a 2½ ton car truck so arranged to show the ease with which same could be dismantled—that is, the wheel taken off and bearings removed for inspection. They also displayed a 6 ton truck of center sill construction and equipped with the new Lincoln Safety Coupler on one end and with rotary dump head on the other end. This was the first showing of this Lincoln Coupler. This is so designed that the link is held on a level, that is, the link will engage the female coupler regardless of the position of the car thereby eliminating the most frequent cause of accidents in coal mines. Twenty-five to thirty-five percent of the accidents in a mine are caused in coupling cars. This coupler received a good deal of attention and favorable comment and many requests were received to supply operators with literature and detailed information. Another feature of the company's exhibit space was a large drawing of the well known Lincoln Truck trade mark showing the detail of the Lincoln Self-Aligning Journal Box principle in a diamond with the caption "The Roller Bearing Properly Placed."

E. J. Longwear Company, Minneapolis.—The patent diamond drilling bit that cuts the core in halves or quarters was the feature of this exhibit, and with this machine a much more thorough analysis of the core can be made. Shaft sinking models, vertical and incline models, head frames, cages, shafts, shaft sinking machinery, drills for shaft, diamond drills, and all styles and lines of kindred equipment were exhibited in addition to the diamond drilling bit. R. R. Longyear, geologist, was one of the representatives giving the demonstration.

Ludlow Saylor Wire Company.—This exhibit was one of the outstanding features on the floor, showing "Perfect" double crimped wire cloth and Rek Tang rolled slot screen. This display demonstrated the famous "Perfect" double crimp construction, together with the matchless precision of weave, which marks all Ludlow Saylor products, from the heaviest space cloth made of steel bars down through every variety of weave to the finest meshes. Crowds of mining men dropped in to see the exhibit, and to visit with E. M. West of Salt Lake City, and J. E. Robertson of El Paso.

MacWhyte Company, Kenosha, Wis.—Monarch mine car hitchings, and a safety hook to prevent the hoist drum at the top of the mine shaft from overwinding were shown in the line of exhibits of this company. There was also displayed a reel hoisting rope, and two cabinets filled with all sizes, styles and strengths of wire rope. A large oil painting of the MacWhyte plant at Kenosha hung over the entrance to the booth. L. W. Bushnell demonstrated the various types of wire rope on display.

Mancha Storage Battery Company, St. Louis.—Two Mancha storage battery mine locomotives on a track in the Coliseum annex were running all day long during most of the Convention week. The locomotives exhibited were the Mancha Hercules, armored


COLISEUM EXHIBIT AMERICAN MINING CONGRESS
E.D. BUICK DIST. MG'R TERRE HAUTE, IND AMERICAN CAR & FOUNDRY CO.
W.H. WILLIAMS VICE PRES HUDSON COAL CO SCRANTON, PA
LOREE BREAKER
D.F. WILLIAMS SALES MG'R HUDSON COAL CO
A.J. FLEMING J R FLEMING & SON INC
COLISEUM ANNEX
A GREAT BUNCH OF EXHIBITS
J.R. FLEMING PRESIDENT J.R. FLEMING & SON INC. SCRANTON, PA
HAIL TO THE "KINK" OF GREASE!
I COMMAND YOU TO USE KEYSTONE SYSTEM OF LUBRICATION TO GIVE YOU A RIPE OLD AGE!
I WISH I'D GOT NEXT TO THE KEYSTONE SYSTEM OF LUBRICATION EARLY IN LIFE
MINE CAR WHEEL
Stops Waste Like This
H.A. BUSBY PRES AND GEN'L MG'R KEYSTONE LUBRICATING CO. PHILADELPHIA
NOW LETS SEE ABOUT THIS EXHIBIT SPACE
EXPOSITION AMERICAN MINING CONGRESS
BLUE PRINT
TRACKAGE
G.E. MARBLE GENERAL ELECTRIC CO.
MONARCH MINE CAR HITCHINGS AND WHYTE STRAND WIRE ROPE — LET'S GO!
J.A. BOOPE CHICAGO MG'R MACWHYTE COMPANY KENOSHA, WIS.
HE'S TELLING EVERY BODY ABOUT HIS STANDARDIZED TIPPLES AND BALANCED HORIZONTAL SCREENS
COLISEUM EXHIBIT AMERICAN MINING CONGRESS
FRANK J. SCHRAEDER, JR PRESIDENT JACOBSEN & SCHRAEDER INC CHICAGO - PITTSBURG
OUR AUTOMATIC DIAL AND WEIGHT RECORDING MACHINE PRINTS THE EXACT WEIGHT OF EVERY LOAD WITHOUT TOUCH OF HUMAN AID!
H.F. RECK PRESIDENT STREETER-AMET WEIGHING AND RECORDING CO CHICAGO
ASK ME ABOUT EASY RUNNING MINE CARS
YOU TELLEM, PORTER, YOU KNOW ALL ABOUT ME!
HYATT ROLLER BEARING
H.K. PORTER HYATT ROLLER BEARING COMPANY, NEW YORK BREEZING INTO THE COLISEUM SHOW
OUR BARSTEEL GATHERING LOCOMOTIVE IS THE PIONEER IN ITS FIELD
THERE GO SOME PRAIRIE CHICKENS, DAN!
"DAN" BOONE MGR COAL AND OIL SECTION INDUSTRIAL DEP'T WESTINGHOUSE ELECTRIC CO
I CAN'T HELP SMILING - I JUST SOLD TWO ELECTRIC MULES
LET'S GET OUT THE NASH AND CELEBRATE
RAYMOND MANCHA MANCHA STORAGE BATTERY LOCOMOTIVE CO.
Lew Merrell

tank and standard gathering type. These locomotives were used running over switches and through mine doors, and made couplings with cars while on the track. This company also exhibited a line of water stills and rheostats. W. F. Exner, secretary of the company, had charge of the exhibit.

Mine & Smelter Supply Company, Denver.—Patented Marcy ball and roller mills, Wifley concentrated and coal washing tables, with a running model of this type on display, Heusser balancers with a metal mechanical balance, and the McCool pulverizer were shown in this booth. C. G. Willard demonstrated these lines at the exhibit.

Mine Safety Appliances Company, Pittsburgh.—Edison electric cap lamps, Gibbs oxygen breathing apparatus, M. S. A. oxygen inhalator, carbon monoxide masks, carbon monoxide indicators, Methane indicator, and other safety appliances were shown. The company's full line was represented. I. A. Palmer was in charge of the exhibit.

Mining Safety Device Company, Bowerston, O.—This company exhibited a Nolan system automatic loader of mine cages by gravity. This automatic mechanism unloads each car from the cage at the bottom of the shaft and takes another car onto the cage. This labor-saving device is operated without power, gravity accomplishing the entire automatic operation. A miniature working model was used as a demonstrator to show the operation of the mechanism. J. A. Nolan, the inventor of the system, was the company representative in charge.

Morgan Gardner Electric Company, Chicago.—This company displayed its line of machinery by a series of large photographs. Top cutting machines, two speed shortwall mine machines, tailrope shortwall mine machines, five, six, and eight ton locomotives, alternating and direct current breast machines, and all type of coal cutting machinery are sold by this company. E. O. Wiederanders was the company representative in charge of this booth.

Myers-Whaley Company, Knoxville, Tenn.—In this exhibit a full size and fully equipped coal shovel was used in demonstrations such as mucking in tunnel excavation or loading mine cars underground. The machine is equipped with a scoop which drops the coal by an automatic dump onto an endless conveyor, which loads the cars. Half ton chunks can be loaded with this machine, and it attracted quite a bit of attention on account of being the largest piece of actual machinery in the Coliseum. Charles C. Whaley, sales manager of the company, gave the demonstrations with the shovel, which was kept moving on its track in the operation.

Norberg Manufacturing Company of Milwaukee.—A large exhibit was made by this company of mine hoists and mine machinery.

Novo Engine Company.—This exhibit was in charge of George C. Schaffer, southwestern district manager, and Byron C. Patten of the Chicago office, 800 Old Colony Building. The exhibit showed some of the many varieties of hoisting and pumping outfits which the Novo Engine Company manufacture. These pumping outfits and hoists are equipped with gasoline and kerosene engines or with electric power. C. E. Bement, vice president and general manager of the Novo Engine Company; E. J. Bement, treasurer and sales manager; and G. H. Holmes, chief engineer, also attended the American Mining Congress Convention and Exposition. Novo Engine Company would be pleased to send their new No. 921 catalog to any of the readers of the Mining Congress Journal who may be interested in their equipment.

The Ohio Brass Company, of Mansfield, Ohio, had a stretch of trolley wire at its booth on which was installed such O-B material as clamps, hangers, frogs, section insulators, dead end clamp and insulated turnbuckle. Samples were also on display of other O-B supplies for electric haulage, such as rail bonds, welding machines of both the resistance and dynamometer types, Imperial headlights, feeder wire insulators, etc. A few high tension porcelain insulators were also exhibited of the class that is used in all classes of transmission and distribution service.

Ottumwa Box Car Loader, Ottumwa, Iowa.—A moving picture projection in the booth exhibited the line of patent loading and unloading of this company. There are 10 different types of unloaders, all of either steam or electric power, including the electric portable unloader, car switcher, rubber belt conveyor type, steel belt type, pusher model, gravity unloading cradle type and the self dumping cage. H. A. Phillips was one of the representatives giving this demonstration.

Ottumwa Iron Works, Ottumwa, Iowa.—Roller bearing trucks for mine cars and electric and steam mine hoists were exhibited, and enlarged photographs artistically framed showed Ottumwa installations of equipment and models of machinery types. Models of an Ottumwa mine car wheel were shown, also the parts cut in cross section to show the type of construction. H. R. Brill and others in attendance at the exhibit assembled the parts of wheels to demonstrate the functions of each part.

Peabody Coal Co.—One of the most interesting and attractive exhibits was that of the Peabody Coal Co. A large lump of Shellbark coal weighing considerably over ten tons, was the outstanding feature and naturally created great interest. The company's very extensive operations in the coal fields were shown by moving picture projections. A series of enlarged photographs of the various mines of the company added considerably to the value of the exhibit.

Railway Mine Supply Company, Kincaid, Ill.—Included in a full line of its mine car line of equipment shown by the Railway Mine Supply Company, were two types of mine cars which were kept in full operation on their own tracks in the Coliseum annex. Wheel parts and Ramsco roller bearing wheels were in the booth exhibit. John J. Gaffney was the company representatives.

Roberts and Schaefer Company.—The exhibit of Roberts and Schaefer Company, of Chicago, Illinois, specialists in the designing and building of coal mining and coal washing plants, consisted of working models of the Marcus horizontal screen and picking table, and the Balanced Marcus horizontal screen and picking table as applied to coal preparation. It consisted also of a model of the new Roberts and Schaefer mine skip. These models attracted a large amount of attention owing to the success of the many actual installations at coal mines throughout the entire United States and Canada. Many beautifully framed photographs of plants designed and built by this company graced the exhibit.

John A. Roebling's Sons & Company, Trenton, N. J.—Wire ropes and cables were exhibited, including a full line of all wire rope types, insulated wire, safety slings, erection work, construction wire rope and cables. Included in the exhibit was a section of the cable used in constructing Brooklyn Bridge. W. H. Slinghuff was in attendance.

St. Louis Structural Steel Company, St. Louis.—A complete line of coal mine cars and car equipment were displayed in this exhibit. Two mine cars were shown, one of wood and one composite car of wood and steel. These cars were running on a track for exhibition purposes, and are almost identical to railway cars in equipment. In addition to the mine cars, there was a display of brass bearing self-aligning journal box trucks, spring draw-bars, bumpers and couplings for mine cars, wheels, wheel parts and gears. T. A. Parker was in charge of this exhibit.

Sanford-Day Iron Works Company, Knoxville, Tenn. This exhibit attracted a vast amount of attention, being a model on the exact scale of a mine with a miniature electric train dumping coal into the tipple by use of the model cars manufactured by this company. Whitney roller bearing trucks, car parts, model cars, wheels, and parts were included in this exhibit. President Hugh M. Sanford was in charge of the booth.

Service Motor Truck Company, Wabash, Ind.—This company exhibited a three and one-half ton truck with a dump body and hydraulic hoist.


GEO. W. AULMANN, VICE PRES. EAGLE IRON WORKS COAL MINE EQUIPMENT DES MOINES, IOWA
TO GOODMAN MANUFACTURING COMPANY PLANT
COLISEUM
A. H. BENEDICT GOODMAN MFG CO CHICAGO
THEY SAID WE COULDN'T DRIVE LOCOMOTIVES- BUT WE'RE SURE SHOWING THEM!
WHITCOMB'S WORM DRIVE
W. C. WHITCOMB, PRESIDENT GEORGE D. WHITCOMB CO., ROCHELLE, ILL
IM NOT RIDING MANCHA'S ELECTRIC MULE - BUT WILL BE GLAD TO SHOW YOU THE REAL ARTICLE AT THE NEXT SHOW
F.A.W LEWIN MANCHA STORAGE BATTERY LOCOMOTIVE COMPANY
THIS ISN'T A PITTSBURG STOGIE - IT'S A WILLIAMSPORT WIRE ROPE
M. E. MAGGART, DIRECTOR OF ADVERTISING WILLIAMSPORT WIRE ROPE CO. WILLIAMSPORT, PA
THE MYERS WHALEY METHOD DRIVES OUT THE OLD HAND SHOVEL
I SEE MY FINISH!
WM. WHALEY GEN'L MG'R MYERS & WHALEY KNOXVILLE, TENN
TAKE IT FROM ME - OUR C-M MINE SPLICER IS STRONGER THAN THE WIRE
HOW DO YOU FIND BUSINESS?
BY GOING AFTER IT!
J. C. WILSON, MGR MINING MATERIAL SALES OHIO BRASS CO MANSFIELD, O.
OUR HOLMES HELICAL ADJUSTABLE END LOADER SHOOTS THE COAL OUT SMOOTH AS A WHISTLE!
F. R. HOLMES SEC'Y AND SALES MG'R, ROB'T HOLMES & BROS. DANVILLE, ILL.
KENOVA MINE CARS BUILT TO LAST
YOU TELLEM TAYLOR
W. H. TAYLOR, PRES. THE KENOVA MINE CAR COMPANY KENOVA, WEST VIRGINIA
AUTOMATIC DROP BOTTOM MINE CAR - EVENTUALLY, WHY NOT SOONER!
HE SAID A CARFUL!
DON'T FORGET WHITNEY WONDER TRUCKS - I MAKE THEM
H. W. SANFORD SANFORD-DAY IRON WORKS KNOXVILLE, TENN
THE ROLLER BEARINGS PROPERLY PLACED MAKES EASY RIDING!
H. W. RICHARDS SALES MG'R LINCOLN STEEL & FORGE CO. ST. LOUIS
MINE EQUIPMENT
SIMPLEX SAFETY MINE JACKS - THATS ALL!
L. E. ALLEN, VICE PRES TEMPLETON KENLY & CO LTD CHICAGO.
Lew Merrell

Siebe, Gorman & Company, Chicago.—This company exhibited all kinds of safety appliances. Proto oxygen breathing apparatus and Antijoys breathing apparatus were shown. Safety masks of all kinds, the Kata-Thermometer, and animal air testers are included in the full line of safety appliances. The bird and animal boxes are used in mines where non-odorous gas exists. These were air-proof boxes which can be placed where bad air is suspected. When opened, the air of the outside rushes in, and then if closed again, a sample is easily procured. J. A. Ackerman was in charge of the exhibit.

Sinclair Refining Co.—Exhibit consisted of the process of petroleum from the drilling of the well to the consumer at the service station, a complete scale model with machinery, tank cars, oil derrick all in operation. The large center piece was made of paraffin wax, and the plinth of the column of petroleum coke. Various grades of lubricating oils were shown at the end of booth. This exhibit together with the motion picture of Sinclair oil activities in Mexico demonstrated once more to the technical and operating man what is behind "Sinclair Service."

Sivyer Steel Casting Company.—The display emphasized the extending growth of the use of electric furnace steel in the manufacture of mining machinery. The exhibit consisted of a display of electric furnace steel gears, pinions, sprockets, mine car wheels, coal cutters, shovel castings and various other castings used in this line including various alloys, such as vanadium, nickel and chrome. By the use of the electric furnace, the Sivyer steel casting company has developed a steel that is strong, tough, sound with exceptional anti-crystallization and wear-resisting properties.

"S. K. F." Industries, Inc., New York City.—A wheel revolving on bearings which kept turning of its own momentum for six hours, thereby affording a good demonstration of its frictionless action, attracted considerable attention at this booth throughout the week. Self-aligning radial bearings and thrust bearings of all types and sizes and in various stages of construction were shown. R. C. Byler was in charge.

Southern Wheel Company.—The exhibit of this company's mine car department included all the details necessary for the proper display of their hollow axle truck. The Hollow Axle Truck is a combination of a plain bore or bronze bushed wheel with a hollow axle, which, due to the material used, is much lighter yet stronger for a given load. The lubricating system provides for the introduction of oil through either end of the axle, the oil then flowing into the wheel cavity through ports in the axle. By virtue of this arrangement an oil supply of from four to six quarts of oil is carried in each pair of wheels. A chilled thrust bearing on the hub, and an exposed linch-pin wheel fastening complete the general scheme of the running gear proper. With this gear is ordinarily furnished a ¼" steel plate designed to keep the truck permanently squared with the car body. This exhibit was arranged by and in charge of Walter C. Doering, Vice President of the Southern Wheel Company.

Standard Oil Company of Indiana.—In Spaces 57 and 57 the Standard Oil Company of Indiana displayed a complete line of oils and greases prepared for mining machinery. The list included gasolines, greases for mining air tools, cylinder oils for steam and low pressure drills; engine, transformer and turbine oils, and other Standard products for use in mines and on mine equipment.

The Streeter-Amet Weighing and Recording Company, of Chicago, presented an exhibit demonstrating advantages possessed by the Streeter-Amet mine tipple automatic weight recording attachment.

The attachment prints the weight automatically on a paper tape and entirely removes the human element from the weighing operation, thereby eliminating carelessness and dishonesty.

Sullivan Machinery Company.—This firm, represented by Joseph H. Brown, Chicago district sales manager, exhibited in Booth 67 one of its largest size Diamond core drills, class "P", capacity, 5,500 feet; its new coal mining machine cutter bit sharpener, and a varied display of Sullivan rotator hammer drills, Sullivan water jet stopers, water drifting drills on column mountings, also photographs of coal mining machinery. In the Annex, a Sullivan "WK-26" portable motor driven mine car type air compressor was in operation to supply air for the Shuveloder exhibit next door, and the Sullivan turbinair portable mine column hoist, capacity 2,000 pounds, vertical lift, was also operated from the compressor, hoisting a 600 pound weight for exhibition purposes.

Taylor-Wharton Iron and Steel Company, High Bridge, N. J.—Prepared steel friction parts for mine machinery was shown by the Taylor-Wharton Iron and Steel Company. Included in the exhibit were samples from full lines in manganese steel castings for grinding mills, gears, pinions, Panama and reversible teeth, conveyor parts, mine and skip car wheels, chain sprockets, steam shovel parts, coke handling machinery parts, and crusher and pulverizing friction parts. H. F. McDermott was in charge.

Templeton, Kenly & Company, Chicago.—This company displayed jacks of all kinds for mine work and shoring. There was also included in this exhibit a full line of mine jacks for coal cutting machine, motor hoisting, re-railing, mine locomotives, track jacks, and car spotters. The Templeton-Kenly jacks are distinctive in the jack trade because they are made without rivets. The exhibit was arranged to demonstrate safety, efficiency and economy. L. E. Allen was one of the company representatives present.

Thomas Elevator Company.—Designers and manufacturers of hoisting machinery. Their exhibit consisted of two band friction single drum slope hoists, one with fifty horse-power and one with 100 horse-power and a 5 horse-power room hoist. These hoists were operated under power and formed a very interesting exhibit. Messrs. Moore, Boldebuck, Block and Twyman were in attendance at the booth.

Timken Roller Bearing Co.—The Timken booth was one of the real features of the exhibit. Mine car axles built by two prominent mine car manufacturers and equipped with Timken Bearings stood at the entrance of the booth and played no small part in making it a drawing card. The exhibit was under the general supervision of George C. McMullen, manager of the industrial bearings division, who with E. R. Phillips, Boyd Keifer, E. W. Austin, A. Dorfmueller, J. W. Weir, division sales engineers, looked after the visitors. These Timken representatives were kept busy from the opening of the Exposition hall in the morning until closing time late each evening, explaining the many points of advantage of Timken bearings to mine car manufacturers and operators who thronged this booth.

Tool Steel Gear & Pinion Co. The Tool Steel Gear & Pinion Company, Cincinnati, Ohio, had an exhibit showing various samples of mining locomotive and machine gears which they can furnish as repair parts for practically all types of mining equipment. Their gears are hardened and toughened so that they will outwear from five to eight of the ordinary untreated steel pinions and will outwear at least two of the specials that are now being marketed. Samples were available showing the peculiarities of the hardening process that they use, also numerous gears and pinions that had been in service and made extraordinary records for long life.

W. S. Tyler Company, Cleveland.—Hum-mer electric screens, made in all sizes, Ro-top testing screen, shakers for making screen analysis, woven wire screens, vibrating screens, which can be adjusted to the size of coal desired to be screened and other lines were on exhibit in this company's booth. J. H. Jackson was one of the company representatives present

Union Steam Pump Company, Battle Creek, Mich.—A good representation of the company's line of steam and electric driven pumps for ordinary mining service was displayed. The efforts of the company are devoted to the building of simplex, duplex and triplex pumps and to condensors, centrifugal pumps and air compressors. In addition to showing many types and varieties, the company supplemented its mechanical exhibit with drawings, photographs and literature of convenient form.

Welch Safety Hoist, by C. R. Welch, Denver.—Mr. Welch exhibited his gravity hoisting engine controller, which prevents overwinding. A signal is flashed by the device to the engineer to slow up when the danger zone is reached. The hoist is operated with a controller, and is very simple of operation. This device has proved successful in coal mines and western mineral mines.

Weinman Pump Mfg. Co.—An interesting pump exhibit was shown by the Weinman Pump Mfg. Company, of Columbus, Ohio. A self-oiling mine pump in operation created a great deal of favorable comment. A pump of the same type was dismantled enabling the makers to thoroughly demonstrate the design and mechanism of this unit. The same company demonstrated and had in operation a full ball bearing horizontal split shell centrifugal pump delivering 200 gallons of water per minute against 70 foot head. The interior parts of this pump were shown in a dismantled non-operating unit.

Westinghouse Electrical and Manufacturing Company, East Pittsburgh, Pa.—This company exhibited an electric mine locomotive of the gathering type, with bears, wheels, supplies and parts exhibited separately. Mine motors of all types for power and light, line materials, controls, and a full line of electrical equipment for mines were on display. The electric locomotive was made by the Baldwin Locomotive Works in Philadelphia and outfitted with all of its electrical equipment by the Westinghouse company. B. C. Siewerth was the Westinghouse representative making the demonstrations.

Geo. D. Whitcomb Co.—The Geo. D. Whitcomb Company of

Rochelle, Illinois, located at the south end of the main hall, exhibited to many interested visitors their "Permissible" controller and motor which were especially designed to comply with Schedule Fifteen of the Bureau of Mines, which schedule regulates the use of electrical equipment in gaseous mines. They displayed also a complete storage battery locomotive arranged over mirrors, in such a manner as to demonstrate their "worm drive." The exhibit was augumented by a full size cut away model of the direct worm driven axle showing its constant alignment and ease of operation.

Williamsport Wire Rope Company, Williamsport, Pa.—All sizes of wire rope were exhibited by this company, a colored electric fountain playing in the center of the booth adding attractiveness to the display. The feature of these ropes is the Telfax tape marking device to distinguish grades of rope. The tape is built into the hemp core, and any rope can be told without a laboratory test by the color of this Telfax tape, thus insuring against using the wrong strength of rope for a construction job, and preventing fraud or mistakes in delivery. M. E. Maggart was the company representative present.

Wyoming Shovel Works, Wyoming, Pa.—Demonstration of Red Edge picks and shovels were given almost continuously by this company during exposition week. The purpose was to show that the shovels could be bent and twisted without breaking. Picks and shovels of all types and sizes were shown. G. E. Geer was in charge.

ELECTRIFICATION IN DEVELOPMENT OF THE MINING INDUSTRIES

IN A PAPER upon "Future Electrification in the Development of the Mining Industries," prepared for the Mining Congress Convention by Girard B. Rosenblatt and Graham Bright, of the Westinghouse Electric & Mfg. Co., the conclusion was reached that further electrification of the mining industry will be developed along three lines: the displacement of manual labor, supplanting the present steam drive by electric power, and the development of new metallurgical processes. It was held that one of the greatest opportunities for the lowering of metallurgical costs lies in the commercial development of processes using electric power directly for the production of thermal effects and for electrolytic action. If the answer to the one question, "Does it pay," can be given definitely, then the answer to the question "How far will electric power development go in the mining industry" can also be given.

Three lines along which mine operators may devote time profitably to the study of reducing costs per ton by the proper utilization of electric power, were pointed out. The first was the proper selection of apparatus to do the work which must be done; the second was the proper scheduling of operations in order to use the power produced or generated to the best advantage; the third was the possibility of reducing the unit cost of power.

NEED OF AN INDEPENDENT AMERICAN ORGANIC CHEMICAL INDUSTRY

DR. WILLIAM JAY HALE, director of organic chemical research of the Dow Chemical Company, Midland, Mich., delivered an address during the Mining Congress convention upon the subject, "Shall We Have an Independent Organic Chemical Industry," making a plea for a greater and greater American effort to that end. Chemistry, he held, is the basis of all industries, and the chief lesson of the world war was that America must promote its present and future industries and protect itself in the next war by beginning now to develop its chemical industry. If this is not done, he held, Germany will again become paramount in peace as well as in war. As a means to attainment of the end sought, Dr. Hale favored the immediate enactment of the Fordney Tariff Bill. Along this line he said:

"Above all, we must have the Fordney Tariff Bill enacted into a law at the earliest possible moment. Many men need employment, and they find it not. Nor will they find it until the tariff is settled. Money will not seek investment until there is abundant assurance of settled industrial conditions. Listen to the prattle about the Panama tolls and anti-beer. What do these childish things amount to in comparison with the needs of our industries? 'Tis the industries that must open up means of employment. The tariff, and that alone, is the crux to the whole situation, and a sure guide of prosperity.

"Mr. Fordney has embodied in the new tariff measure the greatest and most scientific principle ever proposed in the history of American tariff,—the fixing of duties based upon American valuation. At last a tangible base is set before us and the foreign falsification of values forever eliminated. What manner of mortal man ever heard of even an approximate value to an object purchased in foreign lands? Mr. Fordney brushes aside the dust of countless years of forgery as practiced by importers,—the un-American agents of Hades, and opens the books of American manufacturers where costs of production are easily discernible.

"The tariff, gentlemen, is the most important question before Congress. Pray think seriously upon it, and upon the opportunity that knocks at our door, now or never, to build up the great dye industry, an industry that will enable us ever to be ready in case of war to combat fiercely and courageously, and with abundant ammunition,—for remember the next war will be chemical,—a chemical warfare that will require the constant labor of every scientist in America."

IMPOUNDED OIL FUNDS DECISION

IMPOUNDED OIL FUNDS released to oil companies under provisions of the act of February 25, 1920, constitute taxable income in the year in which the funds were paid over by the receiver, according to a decision promulgated by the Commissioner of Internal Revenue.

This decision precludes the allocation of such funds over the years in which they were impounded and subjects such income to the higher taxes applying in 1920 or 1921, according to which year released by the receiver to the taxpayer.

NEW MEXICO CHAPTER ELECTS OFFICERS

Members of the New Mexico chapter of the American Mining Congress held their annual meeting at Silver City, October 3. The program consisted of addresses by several well-known mining men, all expressing confidence in the future of the mining industry. At the close of the session, the following officers were elected for the coming year: John M. Sully, Hurley, Governor; Powell Stackhouse, Jr., San Antonio, first vice governor; S. J. Kidder, Mogollon, second vice governor; C. T. Brown, Socorro, third vice governor; Ira L. Wright, Silver City, treasurer. The Executive Committee was named as follows: J. M. Sully, C. T. Brown, Powell Stackhouse, Jr. The new board of directors consists of the above officers and the following: E. M. Sawyer, Tyrone; B. B. Hanger, Albuquerque; M. W. Porterfield, Silver City; F. W. Vellacott, Silver City; I. J. Stauber, Lake Valley; R. I. Kirchman, Silver City; H. G. S. Anderson, Hurley; G. A. Kaseman, Albuquerque; V. Carl Grubnau, Waldo.

SENATOR NICHOLSON EXPLAINS NEED OF A DEPARTMENT OF MINES

SENATOR Samuel D. Nicholson of Colorado delivered an address before the American Mining Congress Convention Thursday morning, October 20, in support of his bill now pending in the Senate for the creation of a new executive department of the national government to be known as the Department of Mines, and presided over by a member of the Cabinet, the Secretary of Mines.

Senator Nicholson first reviewed the confusion which arose in Washington during the war when it became necessary to create scores of new bureaus in order to stimulate production of the mines, the output of which was essential to the prosecution of the war. He then repeated the statement of Abraham Lincoln that the prosperity of the mines means the prosperity of the nation, and gave his reasons for the creation of such a department which he considered as applicable in peace time. He spoke in part as follows:

"The first Secretary of Agriculture was appointed in 1889, in which year the agricultural output of the nation was valued at $2,460,000,000. In that year the mineral output was valued at $551,000,000. In 1900, the mineral output had expanded to $1,064,000,000, or nearly double that of 1889. In 1910 the mineral output again doubled to a production of $1,992,000,000. The United States Geological Survey estimates that the mineral output of 1920 was $6,707,000,000, or twelve times as great as that of 1889 and nearly three times the value of the agricultural output at the time when the Department of Agriculture was created. Because of this rapid growth in the mining industry and the position of increasing importance that it has, and will continue to assume, for the nation as a whole, there should be no question but that it is entitled to Cabinet representation.

"Another evidence of the importance of the mining industry to the industrial system of the nation is the amount of traffic which it supplies to the railroads. Of a total freight tonnage of 2,307,000,000 tons carried by the railroads of the United States in 1918, the mining industry supplied 1,500,000,000 tons, or over 65 per cent, while the combined tonnage of the agricultural and livestock industries was but 290,000,000 tons, or less than 13 percent.

"It is apparent from the foregoing statement that the railroads of the nation could not provide the necessary transportation facilities for the agricultural and livestock industries were it not for the fact that the mining industry sustains the major part of the burden of their operating costs. This reflects the general dependence of the public upon the operation of the mines for the lowering of the cost of transportation on their food products. The cost of living would become prohibitive if the agricultural and livestock industries were forced to bear the entire burden of operating the railroad system.

"The United States Geological Survey, in estimating the world's production of minerals, shows to what extent the United States has contributed. In 1913 the United States produced 39 percent of the 1,342,300,000 metric tons of coal produced by the world. In 1918 we produced 355,900,000 barrels of crude petroleum, which represented 67.8 percent of the total produced by the world. For the period 1857–1918 the production of crude petroleum by this country was 4,608,000,000 barrels, which represents 61.1 percent of the total world output. This country in 1913 produced 63,000,000 metric tons, or 36 percent of the world's output of iron ore. We consumed in that year 64,500,000 tons of iron ore, from which 31,500,000 metric tons of pig iron was produced, or 40 percent of the world's total, and 31,800,000 metric tons of steel, which was 42 percent of the world's production. The United States produces from domestic ore about 60 percent of the world's output of copper, and, through its commercial control of deposits in Mexico, Peru, Chile and Canada, supplies about 9 percent more. The iron, coal, oil and copper reserves of the United States exceed the combined developed reserves of all other nations. This list of minerals extensively produced in this country could be greatly lengthened.

"Practically all of the foreign nations regard the mining industry so important that they have made special governmental provision for it in creating departments of mines. In Canada and most of the British possessions, a Minister of Mines presides over the department. From an international standpoint, an industry which makes so prominent a contribution to the world's output of fundamentally necessary mineral products as the mining industry of the United States should be dignified by having a separate department in the government, presided over by a representative of the President's Cabinet.

"Many constructive laws have been enacted for the benefit of the agricultural industry and I am in hearty accord with all that has been done as favorably affecting the farmer and the general interests of the public. I contend, however, that the welfare of the mining industry is as fundamentally important to the general welfare and prosperity of the nation as the agricultural industry, and that consideration should now be given the request of that industry for a Department of Mines with Cabinet representation.

"I am informed by the Secretary of Labor, in a letter of recent date, that we have approximately 19,000,000 wage earners in the United States whose employment, either directly or indirectly, depends upon the production of minerals and their manufacture into the machinery of industry, the implements of agriculture, and the tools of trade.

"This nation's labor will have to face the keenest competition of the labor of the world, and the superior operating advantages which our labor should derive from inventive improvements will mean the success and prosperity of the nation's business. Our problems of unemployment will disappear only when the wheels of our industry are all turning, and the speed of these can be greatly accelerated by the creation of a Department of Mines.

"It should now be apparent to the people of our nation that notwithstanding the abundance of our agricultural yield, we have over 5,000,000 men whose umenployment largely results from the present depressed condition of the mining industry. I believe that there are those who still agree with the immortal Lincoln who delivered this message to the mining industry a few days before his death:

"'*Tell the miners for me that I shall promote their interests to the utmost of my ability; because their prosperity is the prosperity of the nation.*'"

SECOND NATIONAL STANDARDIZATION CONFERENCE

STANDARDIZATION of mining methods, practices and equipment received an impetus at the Second National Standardization Conference, held in conjunction with the Twenty-fourth Annual Convention of the American Mining Congress, Chicago, Ill., October 17-22, that will carry the work of this branch of the organization far during the next twelve months. Practically every large manufacturer of mining equipment sent representatives,—in fact one enterprising manufacturing firm sent twelve representatives—and the discussion and conclusions reached at the conference should have the careful consideration of every mining operator in the country. Most of the sessions were held at the Congress Hotel, the convention headquarters. This obviously was an error as many of the representatives found the exhibits of mining machinery and equipment at the Coliseum so fascinating

THE COLONEL
Warren R. Roberts, leader of the mining standardization brigade

that not all sessions were well attended. It has at this early date been definitely decided that the next meeting of this important branch will arrange all of its sessions at the hall in which the exhibit is staged.

To the unceasing, untiring effort of Colonel Warren R. Roberts, president of Roberts and Schaefer Manufacturing Company, chairman of the Coal Mining Branch of the Standardization Division, much credit for the success of the meeting should be given. Those in attendance appreciate keenly the broad vision he has for this work, and the industry as a whole is fortunate in having the direction of this important work under the supervision of two of the greatest authorities upon this subject in the country. The burden of work fell heavily upon Colonel Roberts this year, because of the fact that Mr. Charles A. Mitke, Chairman of the Metal Mining branch has been out of the country on professional work for the past few months. Mr. T. O. McGrath, of the Shattuck-Arizona Copper Company, represented Mr. Mitke at the conference, and very ably assisted in the work of the conference. However, Colonel Roberts unselfishly neglected his own personal business, and devoted his entire attention to making a success of the meeting, for several months prior to the conference. The American Mining Congress takes this opportunity of publicly expressing its great appreciation of the service rendered by this Division, and particularly of that rendered by Colonel Roberts.

In addition to representatives of manufacturers, there were at the conference representatives of the United States Bureau of Mines, the American Institute of Mining and Metallurgical Engineers, the War Department, the American Engineering Standards Committee, the Associated Companies, the Bureau of Standards, the National Safety Council and many mine operators. The addresses delivered were of great importance to the industry, and indicate the wide-spread interest in the subject.

The official Standardization Bulletin will be immediately prepared, and it is hoped that it will be ready for distribution by the first of the year. This bulletin will carry the full proceedings of the conference, and the addresses presented to it. It will be distributed widely, in order that the greatest amount of criticism and suggestion may be received. None of the reports to the conference is final. They are progress reports. It is hoped, however, that the work will progress so rapidly during the coming year, that each section will be enabled to get their recommendations in shape to present to the American Engineering Standards Committee, for approval.

At the conference it was decided to enlarge the work by the appointment of additional committees. The first to be appointed was a Special Joint Committee, whose duty it shall be to coordinate the reports of the sectional committees of the two branches. The two branches have committees doing work along similar lines, such as the Sectional Committees on Mine Ventilation. The Special Joint Committee will coordinate the work in such a manner that there will be no conflicting recommendations. For the Metal Branch the conference appointed upon this committee, Messrs. Arthur Notman and William Daly. The third member of the committee will be appointed by Mr. Mitke. For the Coal Branch, the conference appointed Messrs. C. W. Watts, W. J. Montgomery and E. D. Knight

The conference recommended the appointment of a Publicity Committee. It is believed that a thorough understanding of the purpose of the Division and its work will result in speedy results for the industry, and this committee will attempt to prepare articles for publication that will give the fullest understanding of the work under consideration.

One of the most important recommendations of the conference was the recommendation for the creation of a Committee on Welfare work. The matter was presented to the meeting of the General Correlating Committee held in conjunction with the conference, and the decision reached at this meeting was that the work was one of the greatest importance, and that the American Mining Congress should undertake it, by virtue of its great humanitarian interest in the industry. The first work of the American Mining Congress was that of Safety. Through its efforts the United States Bureau of Mines was organized, and its first work was Safety. The sectional title for this committee was not definitely adopted. Its work will not pertain to the standardization of miners houses, nor to the sanitation of mining communities, except in the general recommendations. It will concern itself primarily with the coordination of data relative to successful welfare systems, and to the dissemination of the data when collected to the industry generally, in order that companies desiring to install systems of welfare, may have immediately available a digest of the best thought of the industry upon the subject. It is planned in conjunction with this section, to form a committee of the wives of the members of the American Mining Congress, who are interested in welfare and safety work in the mining communites.

Outline of Work Coal Mining Branch

Colonel Roberts, at the opening session, gave the following outline of the work accomplished by the Coal Mining Branch during 1921:

In our "Standardization Bulletin" beginning on page 30 you will find the Reports, Briefs of Discussions, etc. of the Coal Mining Section (Branch) and beginning on Page 60 corresponding reports, etc. for the Metal Mining Section (Branch) with the exception that by some over-sight one important report of the Coal Mining Branch, namely, the Joint Report of the two Committees on Underground Power Transmission and Power Equipment were not printed in the proper order and will be found on Page 71 of the "Bulletin." I am assuming that all our members and guests have read these Reports, Briefs of Discussions, etc. and are, therefore, familiar with the work of our Standardization Division as presented in the "Standardization Bulletin." I will, therefore, only review the progress which has been made on our work since our last Standardization Conference. This review must necessarily be made by reporting on the progress made by each Sub-Committee.

Mine Drainage—As indicated by the report of this Committee last year they had made no particular progress and the Committee was therefore immediately reorganized after our last Standardization Conference. The results by the reorganized Committee have been most gratifying. Mr. E. D. Knight of the Cabin Creek Consolidated Coal Company, Kayford, West Virginia, was induced to accept the chairmanship of this Committee and by diligent effort he and his Committee have presented a very satisfactory progress report.

Outside Coal Handling Equipment.—A change in the chairmanship of this Committee was made immediately after the last Standardization Conference as the Chairman of your General Committee had previously acted as Chairman of this Sub-Committee and found it impossible to continue to direct this work. The American Mining Congress persuaded Dr. Henry M. Payne, Consulting Mining Engineer of New York City, to accept the chairmanship of this Committee. Dr. Payne somewhat enlarged his Committee, immediately laid out a good program for them to develop and has an interesting report for your consideration.

Mining and Loading Equipment.—A change was also made in the chairmanship of this Committee as Mr. Carl Scholz, who had previously directed this work, having assumed new and larger responsibilities, could not continue to handle this work and with his assistance we secured Mr. C. A. Cabell, Vice-President, Carbon Fuel Company, Charleston, West Virginia, to act as Chairman. We regret to report however that Mr. Cabell has been facing so many difficulties, along with other operators of West Virginia, that he has not had the time to devote to this work which its importance justifies. This Committee, therefore, will not present a report but will offer a program for discussion at our Conference and we hope that by this method we will develop this subject and be able to have some sort of a report drawn up for this Committee to be contained in our next "Standardization Bulletin."

Mine Ventilation.—This Committee presents a most satisfactory report, being an amplification and revision of the report they rendered at our last Conference in Denver. Many recommendations are offered by this Committee which will deserve the most careful consideration of our Conference.

Underground Transportation.—I wish to call especial attention to the report of this Committee as the method of handling their work offers, to my mind, an excellent suggestion for some of our other Committees. This Committee presented a very excellent report at our last Standardization Conference, which has acted as a basis for their work during the past year. On resuming their work this year they divided Underground Transportation into three classifications; namely, "Mine Tracks and Signals," "Mine Locomotives" and "Mine Cars" and appointed a Sectional Committee to develop a program and a report with recommendations to the main Committee. Their reports are therefore offered in this form, namely, one General or Reviewing Report and three Sectional reports on the subjects named. I suggest that some of our other Committees having classifications of work that could advantageously be sub-divided into sections, follow the procedure of this Committee for by so doing and carefully selecting the chairmen and members of such Sectional Committees the work can have more careful and detailed consideration.

Joint Committee on Power Equipment and Underground Power Transmission.—When these two Committees started to develop their work last year they decided that the work was so intimately interwoven that they could conduct their investigations more advantageously by working together, they therefore followed this method and rendered a joint report. This report is the one referred to as being disconnected from the other reports and will be found on Page 71 of the "Standardization Bulletin." A review of this joint report indicates that a vast amount of careful and conscientious work was done by this joint Committee.

When we requested this joint Committee to prepare a program for this year's work they advised that they wished to delay further work on their subjects until they could receive the "Standardization Bulletin" and thereby furnish members of their Committees and also have for distribution to the Industry, copies of their last year's report together with discussions at the Conference, etc. Due to an unavoidable delay in the issuing of the "Standardization Bulletin" this joint Committee therefore did not undertake any work during this season and will have no report to offer at this time. They advised us, however, that they have followed the method of procedure suggested by Mr. Callbreath in his "Introduction" to the Standardization Bulletin and that on receiving replies from men in the Mining Industry and allied professions that they will then take under consideration the suggestions made in these replies and make such revision of their joint report as seems advisable.

Outline of Work Metal Mining Branch

Mr. T. O. McGrath, representing Mr. Mitke, chairman of the Metal Branch, made the report for that branch and in part said: "The Metal Mining Branch is scarcely far enough along to render a report. It has only one completed report, that on Underground Transportation. Mr. Mitke was unable to be present because the sailing of the boat delayed him. The metal mining industry at the present time is much depressed, and has been all year. We expect the cooper industry to show a revival next year, and without doubt the growth of the metal branch will be satisfactory. Progress reports are very interesting and I believe that every one here will be interested in hearing the progress that has been made in the committees of the metal branch, for in spite of the depression our growth has been continuous."

ADDRESS OF COL. WARREN R. ROBERTS

So that a better understanding of the work of the Standardization Division of the American Mining Congress may be had, we believe that the opening address to the Second National Standardization Conference, made by Colonel Roberts, will be enlightening. The subject was, "National Co-ordination of Standardization through the General Correlating Committee," and the address, in full, follows:

As originally planned, the subject which I am now to discuss was given to Prof. E. A. Holbrook, Assistant Director of the U. S. Bureau of Mines, as he is the Chairman of the General Correlating

Committee. However, in developing these two programs it became necessary to allot a different subject to Prof. Holbrook on Wednesday forenoon, and the speaker, being Vice-Chairman of the General Correlating Committee, was under the necessity of taking his place on today's program

I did not realize how formidable a sounding subject had been selected for this address until I handed our program to one of my friends and called his particular attention to the subjects and speakers for these two special sessions. My friend read through these two programs carefully until he came to No. 7 for Thursday afternoon, when, after considerable hesitation, he endeavored to read the title of this number, and after stumbling through all these long words, he was finally stumped on "Correlating" and ended by saying "Hell of a subject." I admitted the allegation but then explained to him that this subject was not selected because of the many high sounding words, but because it correctly described the subject matter for this address.

A full statement of the organization and development of this General Correlating Committee was given at our last Standardization Conference, and is contained in a Standardization Bulletin issued recently by the American Mining Congress I will therefore give

CHARLES A. MITKE
Chairman of the Metal Mining Branch,
Standardization Division

you only a statement of the necessity for this committee in carrying out the standardization program of the several member bodies of the committee.

There are several national engineering societies and industrial organizations that have committees working on programs of "Standardization," "Safety" and kindred subjects which somewhat parallel the work of the Standardization Division of the American Mining Congress. It therefore seemed advisable to organize this committee with representation from each of the societies or organizations that were interested in this work of Standardization for the mining industry. Therefore, about a year ago, this committee was formed and proceeded to develop plans for correlating the work of the various committees referred to above.

Since our last Standardization Conference this committee has been partially re-organized and considerably expanded to include other societies and organizations making application for admission to this work.

As now constituted, the committee is composed of two classes of memberships—viz., Active, and Associate Members.

"Organizations entitled to active membership on the committee are those national bodies whose sole interest is in mining. National organizations only a part of whose work lies in the mining field, are entitled to representation on the committee as Associate Members, without vote, but to be consulted whenever affairs relating to their parts of the industry are under consideration."

The following is the personnel of the present committee:

American Institute of Mining & Metallurgical Engineers—Howard N. Eavenson, Consult. Engr., Pittsburgh, Pa.; Graham Bright, Westinghouse Elect. & Mfg Co., East Pittsburgh, Pa.

The American Mining Congress—Charles A. Mitke, Consult. Engr., Bisbee, Arizona; Col. Warren R. Roberts, Pres., Roberts and Schaefer Company, Chicago, Ill.

National Safety Council—B. F. Tillson, Asst. Supt., New Jersey Zinc Co., Franklin, N. J.; S. J. Williams, Sec. & Chf. Engr., National Safety Council, Chicago, Ill.

U. S. Bureau of Mines—Prof. E. A. Holbrook, Asst. Direct., U. S. Bureau of Mines, Washington, D. C.; O. P. Hood, Chf. Mech. Engr., U. S. Bnreau of Mines, Washington, D. C.

American Institute of Electrical Engineers, New York City—F. L. Stone, General Electric Co., Schenectady, N. Y.; Rep'd A. B. Smith.

The Associated Companies, Hartford, Conn—C. B. Butterfield, Manager. Represented by J. H. Griftner, Associated Companies, Hartford, Conn.

The National Safety Code Committee is an associate member.

The General Correlating Committee function under and report to the American Engineering Standards Committee and represent this committee on all matters of Standardizations as applied to the mining industry. At the last meeting of the committee, "It was agreed that the functions of this committee should be to suggest to the American Engineering Standards Committee subjects for standardization, recommend sponsors, define the scope and limits of a proposed standard; assist in adjusting conflicts or clearing up ambiguities; follow up work underway, and report from time to time upon progress made within its field of activities."

Since the member bodies of this General Correlating Committee have committees working on subjects, some of which wholly apply to the mining industry and others which only partially apply, and since some of these organizations have developed a very considerable program on Standardization, as applied to the mining industry, and to prevent as far as possible the interference with such work, it has been arranged that the method of procedure shall be as follows:

Each of the members of the committee are to pursue their present programs of standardization and whenever any of them have completed any particular portion of their work, which they wish to submit to the industry as a standard, such work shall be first submitted to the General Correlating Committee who in turn will submit it to the various members of the committee for their consideration and approval, or for suggestions.

Should such work be approved by all members of the committee, then it is submitted by the committee to the American Engineering Standards Committee as an American standard.

Should it develop that there are sufficient suggestions or revisions to the work as submitted by the members of the committee, then a sectional committee will be formed to review such work, this sectional committee to be composed of representatives of all members of the General Correlating Committee who are interested in the subjects submitted.

This sectional committee will then revise and approve such work, and re-submit it to the General Correlating Committee for submission to the American Engineering Standards Committee as an American standard.

Members of the General Correlating Committee who are much interested in any such subjects submitted, are to act as joint sponsors with the member submitting such subjects for revisions, while other members who are only partially interested in such subject are to have representatives on the committee to hear the evidence, make suggestions, etc., but do not have a vote in reaching any conclusions regarding the subject.

It is very interesting to know that while this General Correlating Committee has been organized only a short time, and that while the very nature of their work of harmonizing the activities of all the societies and organizations interested in standardization of mining methods and equipment, that they have made very material progress—first in having completed a good, workable organization, adopted regulations for directing this important work as outlined above, and now have under consideration from the members of the committee the following important subjects on which sectional committees will doubtless be formed at a meeting of the General Correlating Committee to be held during the present week here in conjunction with the Standardization Conference:

Safety Code for Ladders.—The American Society of Safety Engineers having a committee preparing a "Safety Code for Ladders" have inquired of our committee whether we would be interested in that portion of their subject as applied to mine ladders, etc., and have been advised that several members of the General Correlating Committee are interested in this subject and will wish to be represented on any Sectional Committee formed to consider the matter.

Mine Ventilation.—The American Society of Heating and Ventilating Engineers having accepted sponsorship for a "Safety Code for Ventilation in public, semi-public, and industrial buildings" have inquired whether our committee would be interested in the formation of a Sectional Committee to deal with the ventilation of mines and have been advised that the American Mining Congress and some other members of our committee are not only interested in this subject, but have committees working on Mine Ventilation with a well developed program.

Uniform Mining Laws.—At the last meeting of our committee it was decided to inquire from each of the organizations represented on our committee, if they wished to be represented on a proposed Sectional Committee for formulating basic mining regulations, it being understood that this Sectional Committee would undertake to draw up the minimum requirements for a good and uniform State Mining Law.

The Chairman of our committee advises that several of our members have responded favorably and that such Sectional Committee will doubtless be formed at the present meeting of the committee.

The U. S. Bureau of Mines has submitted to our committee three proposed tentative American Standards—

(1) Safety Rules for installing and using electric equipment in bituminous coal mines.

(2) Portable electric mine lamps.

(3) Storage Battery Locomotives for use in gaseous mines.

The Bureau of Mines have been made sole, or joint sponsor on Sectional Committees to be formed for considering these three subjects and other member bodies of our committee have been asked to advise whether they are interested in these subjects, and therefore whether they wish to join the Sectional Committees as joint sponsor or simply as members to consider these proposed standards.

Sectional Committees for these subjects will doubtless be appointed at the present meeting of the committee.

The above list of important subjects, under consideration by our committee, are given simply to illustrate the present activity of the committee and to indicate the wisdom in having formed such a general committee to co-ordinate the work on mine standards being carried on by many different societies and organizations.

We are hoping through this Committee not only to direct Standardization for the mining industry, but to awaken in the member bodies a realization of the fact that through Standardization we can most easily and quickly carry out the national programs of Safety and Economy which these member bodies have been diligently fostering for many years.

RESOLUTIONS ADOPTED

MEMBERS of the Resolutions Committee at the Twenty-fourth Annual Convention of the American Mining Congress were:

John L. Steele, Alaska; Erskine Ramsay, Alabama; Arthur Notman, Arizona; Walter H. Denison, Arkansas; E. C. Voorhies, California; E. C. Stimson, Colorado; N. S. Greensfelder, Delaware; Francis A. Thompson, Idaho; Albert J. Nason, Illinois; P. H. Penna, Indiana; T. A. Dumont, Iowa; F. E. Doubleday, Kansas; Henry Laviers, Kentucky; F. E. Mariner, Louisiana; G. M. Gillette, Maryland; J. B. Hardon, Massachusetts; F. W. Sperr, Michigan; F. A. Wildes, Minnesota; Arthur Thatcher, Missouri; Wm. B. Daly, Montana; Roy M. Harrop, Nebraska; John R. Allen, Nevada; Robert M. Catlin, New Jersey; G. A. Caseman, New Mexico; Sidney J. Jennings, New York; W. J. Montgomery, Ohio; George C. Matson, Oklahoma; W. J. Thompson, Pennsylvania; O. Ellerman, South Dakota; F. H. Enright, Tennessee; Wallace Pratt, Texas; J. C. Dick, Utah; Falcon Joslin, Washington; R. M. Lambie, West Virginia; E. F. Yahr, Wisconsin; Peter Kobi, Wyoming.

The following resolutions were adopted by the convention:

The Gold Standard

Introduced by the Gold Conference

Whereas, the purchasing power of foreign countries has and will continue to diminish with a continued loss of gold to the United States, and

Whereas, our export trade upon which the prosperity of the nation, and especially that of the agricultural and mining industries so greatly depends, has been and will continue to be curtailed because of this condition, and

Whereas, the restoration of our export trade depends upon the restoration of the currencies of foreign countries to the gold standard par and the return to the normal purchasing power which would result, and

Whereas, the present system of conducting exchange transactions with the attendant difficulties arising from speculation in the currencies of foreign nations is not scientific, and if continued will further delay the financial recovery of the world, now,

Therefore Be It Resolved, that the American Mining Congress in convention assembled hereby expresses its appreciation of the activities of the Hon. Tasker L. Oddie, U. S. Senator from Nevada in support of the gold standard, and pledges its earnest support to the principle that the gold consumption in manufactures and the arts should be curtailed and the production of new gold stimulated, thus safe-guarding the maintenance of the gold standard and the monetary gold reserve of the nation from further industrial depletion, and

Be It Further Resolved, that this convention endorse H. R. 8404 introduced by Representative Louis T. McFadden, Chairman of the Banking and Currency Committee of the House of Representatives providing for a conference of the representatives of Great Britain, France and the United States to investigate the subject of exchange stabilization with a view of determining the means which may best be employed to remedy the present chaotic condition of the exchanges; and

Be It Further Resolved, that a copy of this resolution be sent to the President of the United States, the Secretary of the Treasury, the Comptroller of the Currency, and to the members of the Senate and House of Representatives of the United States.

Department of Mines

Introduced by Wm. J. Loring of California

Whereas, the mining industry is confronted with special problems due to the consequence of war and the present urgent requirements of re-adjustment, the solution of which could be greatly facilitated by Cabinet representation for the mining industry; and,

Whereas, the employment of nineteen million wage earners of which some five million are now out of employment is dependent directly or indirectly upon the products of the mines, the implements of agriculture, the machinery of industry and the tools of trade; and,

Whereas, the agricultural industry, in 1889 when a cabinet representative for that industry was appointed, had a total value of production of less than two and one-half billions of dollars, while the mining industry had during 1920 an estimated value of production of over seven billion dollars; and,

Whereas, the American Mining Congress has recognized the need for the creation of a Department of Mines and direct cabinet representation for the mining industry, throughout the twenty-four years since its organization during which period this organization has endorsed many bills which have been introduced in Congress for this purpose; and, therefore,

Be It Resolved, that the American Mining Congress in the 24th Annual Convention assembled at Chicago, Illinois, hereby endorses S. 1957 introduced by Senator Samuel D. Nicholson of Colorado, which centralizes all governmental activities related to the mining industry in one department to be presided over by the Secretary of Mines who would be a member of the President's Cabinet, and

Be It Further Resolved, that a copy of this resolution be sent to the President of the United States, the Secretary of the Interior, and to the members of the Senate and House of Representatives of the United States.

Mining Law Revision

Introduced by Horace F. Hunt, Colorado

Whereas, the Metal Mining Laws of the U. S. have been in effect for more than fifty years and during that long period have been interpreted and made definite by a vast number of rulings and court decisions—and while the law may have some defects, the tremendous development of the Mining Industry under its provisions proves it to be one of the best mining laws in the world, and,

Whereas, any general revision would in all probability have as many, if not more, defects than existing law and would in addition, unsettle the great system of Mining Law which has grown up through so many years of experience and interpretation, and,

Whereas, it would be easy to correct the defects in the existing law such as the extra-lateral rights provision by a simple amendment without disturbing the great body of the Mining Law which has worked so well.

Now Therefore, it is the sense of your Committee that any general revision of the Metal Mining Laws at this time is unwise and inexpedient and be it resolved: that the Board of Directors of the American Mining Congress be instructed to appoint a committee to ascertain, as quickly as possible, the opinions of other mining men of the states affected by the proposed revision regarding the necessity for changing the present mining laws and the desirability of the changes embodied in H. R. 7736, and,

Be It Further Resolved, that the Mining Congress use its efforts to further the desires of the majority of mining men of the states affected by the proposed revision as so ascertained.

State Mine Taxation

Introduced by the Tax Conference

Resolved, that the president of the American Mining Congress appoint a committee of not less than ten, with authority to increase its number, to study the question of state taxation of mines within the several mining states of the Union and report to the secretary of the Congress as soon as practicable.

Thanking Tax Commissions

Introduced by the Tax Conference

Resolved, that this Conference register a vote of thanks to those members of State Tax Commissions who have been good enough to take their time and give their efforts in presenting to this conference so carefully the subject of the taxation and revenue systems of their respective states, from which we have so greatly benefited; and,

Be It Further Resolved, that the Committee on Resolutions of the American Mining Congress be requested to spread this vote of thanks in the proceedings of the American Mining Congress in behalf of this division.

State Tax Legislation

Introduced by E. C. Stimson

Whereas, the discussions at this Convention particularly those of the National Tax Conference, have shown that there is a tendency in certain states to discriminate unfairly against mining properties and mining enterprises in matters of taxation and thereby curtail the mining industry and discourage the development of mines in many localities, and discouraging those who otherwise would take reasonable risks in developing the mining resources of the country.

Be It Resolved, that the American Mining Congress protest against all such forms of taxation which directly or indirectly discriminate against mining property or mining enterprise and all forms of taxation which have for their purpose the object of obtaining any greater amount of revenue from mining property or mining operations than is obtained from other property, and,

Be It Further Resolved, that the Tax Division of the American Mining Congress be authorized, upon request of any state chapter, to provide a representative to appear before any board, commission or other legislative committee and to present information looking to the prevention of any such discriminatory or inequitable forms of taxation, and that the Tax Division be authorized to use all available facilities of this organization for this purpose and for the purpose of carrying on a campaign of education in matters of mine taxation.

Alaskan Government

Introduced by Falcon Joslin

Whereas, the development of the great territory of Alaska is a subject of national importance, but a serious decline in the population of the territory is taking place, and

Whereas, the form of government of the territory with its administration distributed through a great number of bureaus, boards and commissions acting without co-ordination from Washington, 4,000 miles and more away, where the law-making power rests, has been mainly responsible for the ill-adapted and unworkable policies under which the territory is suffering.

Now Therefore Be It Resolved, by the American Mining Congress in 24th Annual Convention assembled that it is the sense of this organization that the restrictive policies in effect in Alaska should be reversed and the resources there opened for development on the most liberal terms.

Resolved Further, that it is the sense of this organization that the government of Alaska should be re-organized that its administration consolidated and placed within the territory and made directly responsible to the President.

Economic Education

Introduced by A. G. McGregor

Whereas, during the period of inflation through which we have passed no difficulties were experienced in the adjustment of wages and commodity prices to the reduced purchasing power of our monetary unit, and

Whereas, during the period of deflation through which we are now passing business men hesitate to accept less dollars for commodities and the workers hesitate to accept less dollars for wages, and,

Whereas, unless all commodity prices and all wages are kept closely adjusted to the increasing length of our yard stick of value, poor business, unemployment, and suffering are bound to result, and,

Whereas when our industrial machine is thrown out of adjustment the consequences may be serious if intelligence is not used, and, WHEREAS, the great good accomplished by education in safety first and in winning the war is realized by all, and

WHEREAS, while we can allow our economic illness to continue unabated, running its course with long after effects, it is time we were using intelligence and by a campaign of education and co-operation rid ourselves from its ravages.

Now, Therefore Be It Resolved, that the American Mining Congress in convention assembled does hereby endorse a program of sound business education to the end that labor will better understand the problems of capital and capital will better understand the problems of labor and thereby hasten a return to normal industrial activity upon which the employment and well being of all our people depend.

RAILROAD RATES AND WAGES

Introduced by Wm. J. Loring

WHEREAS, all commercial progress is based upon transportation, no commodity being of any value until it is removed from the place of its original location, and,

WHEREAS, the transportation facilities furnished by the railroads of the United States have been a controlling factor in the development of our industries, and,

WHEREAS, a large part of the costs of transportation as based upon the wages paid to the labor employed in its operation, and,

WHEREAS, at the beginning of the war the wages paid to railroad operatives were equal to or above the average paid for similar service in other activities, and,

WHEREAS, during the war the increasing cost of living made necessary increases in the wage scale to all labor, and particularly high increases were granted to railroad operatives, and,

WHEREAS, because of this increased cost of operation the transportation rates of the railroads were of necessity increased in approximate proportion to the increase in wages, and,

WHEREAS, the costs of living are gradually decreasing, and,

WHEREAS, wages in other lines have been decreasing, and living costs to wage earners in other lines which have accepted reductions would be more nearly commensurate if costs of transportation could be reduced, and,

WHEREAS, the last advance in wages granted by the railroads to their operatives was approximately 25 percent, which increase in wage resulted in an increase in freight rates of approximately 35 per cent; and,

WHEREAS, the cost of living now is less than at the time when the wage scale was fixed, to which the 25 percent increase was added, and, further, a reduction in freight rates would immediately reflect itself in a further reduction in living costs; and,

WHEREAS, high freight rates furnish a continuing barrier to a return to normal conditions, which freight rates cannot be materially diminished so long as the present wage scale is in effect; therefore,

Be It Resolved, by the American Mining Congress in 24th Annual Session assembled at Chicago, Illinois, October 17-22, 1921, that we urge the railroads of the United States in conjunction with the Interstate Commerce Commission and the Railway Labor Board to immediately order that at some early date the last increase in freight rates will be abolished for the benefit of shippers, and that at the same time the last advance which was granted to the railroad operatives will be rescinded, and,

Be It Further Resolved, that we pledge the endorsement and full support of the mining industry of the United States to the railroads in their effort to simultaneously reduce rates and wages to the level existing before the last increases were made.

URGING EARLY TARIFF LEGISLATION

Introduced by the Tariff Conference

WHEREAS, the Congress of the United States is recognizing, in the Fordney Tariff Bill, the necessity for adequate protection for the products of American Mining Industries:

Be It Resolved. that for the speedy resumption of industrial activity by employment of labor; for the realization of industrial independence in the development of our natural resources; for the establishment of the basic mineral industries of the United States on a permanent self sustaining foundation, and for the national security and defense, that those tariff schedules now proposed in the Fordney Tariff Bill. H. R. 7456, which offer adequate protection to American mining industries be sustained before the Senate Finance Committee. That the Senate Finance Committee be requested to give its consideration to the needs of those mineral industries for the products of which adequate provision for protection has not yet been made, and,

Be It Further Resolved, that the speedy enactment of the proposed tariff legislation be urged upon the Congress of the United States.

AMERICAN VALUATION

Introduced by the Tariff Conference

WHEREAS, in order to provide tariff duties which shall adequately protect the industries to which the mining industry furnishes its products as basic materials, a method of valuation must be established which will prevent the dumping of undervalued foreign products in times of industrial depression.

Be It Resolved, that the American Mining Congress endorses the broad principle of American valuation, and leaves to the wisdom of the Congressional committees the determination of the administrative methods necessary for its proper application.

WAR MINERALS RELIEF

Introduced by the War Minerals Conference

WHEREAS, many producers of war minerals who suffered tremendous losses through their patriotic war time endeavors are still not recompensed as contemplated by the government under section 5 of the act of March 2, 1919.

Be It Resolved, that the American Mining Congress heartily commends the attitude expressed in the letter of the Secretary of the Interior to the Committee of Mines and Mining, of the House of Representatives under date of June 2, 1921, in his evident desire expressed therein to achieve absolute justice and equity for all these claimants.

That the sympathetic consideration of the Mines Committees of the House of Representatives and of the Senate to secure adequate relief for these war mineral claimants be heartily commended and that the passage of the needful additional legislation to accomplish this purpose be given vigorous support

COLORADO RIVER POWER PROJECT

Introduced by the Arizona Delegation

WHEREAS, the prosperity and progress of the western states of Wyoming, Colorado, Utah, Nevada, New Mexico, Arizona and California depend upon more irrigation and cheaper power. The industries principally concerned are agriculture, coal and metal mining and transportation. The prosperity of those areas already developed by irrigation is sufficient evidence of the wisdom and need of additional development. The coal and metal mining industry of this area is greater than that of any similar area in the world. Its welfare depends primarily on cheaper power and cheaper transportation, and,

WHEREAS, the possibilities of development of both irrigation and power on the Colorado River in Arizona have long been known, but more particularly within recent years has their importance been called to the attention of the federal government through the investigation of the U. S. Reclamation Service of the Department of the Interior, ably seconded by the activities of the late Secretary of the Interior, the Honorable Franklin K. Lane and by his successor, the Honorable Albert B. Fall, and,

WHEREAS, to secure maximum benefits from these resources no plan should be adopted which will not insure their comprehensive development, now therefore

Be It Resolved, that the American Mining Congress in convention assembled October, 1921, hereby respectfully urges the federal government to proceed at once to complete whatever further investigations may be necessary for the undertaking of this great project, and to provide funds for the building of the first unit thereof.

Conference With Secretary Hoover

From the Committee on Resolutions

Whereas, the American Mining Congress highly appreciates the honor and confidence manifested by the President of the United States in his letter directed to this convention asking that it give consideration to the working out and adoption of methods which will measurably regulate the demand for coal and make its mining and distribution more uniform over the whole year; and,

Whereas, the Secretary of the Department of Commerce has by direct request asked this convention to appoint a committee representative of the whole mining industry to confer with him in the working out of plans and me hods by which the Department of Commerce and other departments of the government may be of greater service to the mining industry of the country, by assisting in putting into effect the most practical and beneficial methods in the production and distribution of our mineral products, and,

Whereas, the conditions and proposals thus placed before this convention by the national administration are of great national importance to all branches of the mining industry; therefore

Be It Resolved, that in response to those requests, a committee be appointed of which the president and secretary of the American Mining Congress shall be ex-officio members from the representative mineral producers of the United States to confer with the Secretary of Commerce and give all assistance possible in developing methods and plans of mineral production and distribution that will improve the conditions which now prevail and assist the Secretary of Commerce in his endeavor to render greater service to the mineral industry of the country.

Conservation and Economy

Introduced by S. M. Evans

Whereas, the public interest will be served by conservation and the lowering of costs of the necessaries of life and the requirements of commerce, and,

Whereas, better co-operation between the producers and distributors of these necessary commodities will serve the public interest, and,

Whereas, certain of our laws now prevent, or fail to provide for, such necessary and beneficient co-operation in such production and distribution of products in the public interest.

Therefore Be It Resolved, that the American Mining Congress advocates such revision of the laws as will enable those engaged in mining and other industrial production and distribution to apply, in the conduct of all the great branches of our national industries the necessary principles of conservation in production, economy in distribution, greater co-operation with labor and the consuming public, to the end that labor in the mining industry may be relieved of the burden of intermittency of operation, and the products of our mines and industries delivered to the ultimate consumer at the lowest possible price.

More specifically, we recommend that Congress so amend the Sherman Anti Trust Act as to vest in miners, manufacturers, and distributors, the right to collect, collate, and distribute to themselves and to the public, statistics of their operations, thus relieving our mining and other industries from the necessity of operating in ignorance of existing stocks, current production, and current demand.

Convention Co-operation

Introduced by the Committee on Resolutions

Whereas, the success of the twenty-fourth annual convention of the American Mining Congress held in Chicago, October 17-22, 1921, has been made possible by the cordial co-operation of the members of the Illinois Committee on Arrangements, the valuable assistance of the Chicago Association of Commerce and of the Illinois Manufacturers' Association; and,

Whereas, the city of Chicago through its official representatives and in the courteous hospitality of its citizens has given to the delegates of the Mining Congress a real feeling of friendly welcome:

Be It Resolved, that the officers and members of the American Mining Congress hereby express our deep appreciation of the co-operation given by the members of the Illinois Committee on Arrangements, the members of the Exposition Committee, the Chicago Association of Commerce, the Illinois Manufacturers' Association; and especially we desire to express our appreciation of the work done by Francis S. Peabody, Chairman of the Illinois Committee on Arrangements, James H. Channon, Chairman of the Exposition Committee, and H. H. Merrick, treasurer of this committee.

Newspapers and News Services

Introduced by the Committee on Resolutions

Resolved, by the American Mining Congress in Twenty-fourth Annual Convention assembled in Chicago, October 17-22, 1921, that it is the opinion of the officers and members of this association that the publicity received during the meeting has been constructive in nature and of great value to the mining industry and to the business of the country generally;

Resolved, Further, that we express our deep appreciation for the co-operation given to this end by

The Associated Press
City News Bureau
International News Service
United Press Associations
Journal of Commerce
Chicago Herald & Examiner
The Daily News
The Chicago Journal
The Chicago Evening Post
The Chicago American

FOREIGN EXCHANGE DISCUSSED BY MINING CONGRESS ECONOMIST

The FOREIGN EXCHANGE situation was clearly delineated and possible remedies were outlined when the House Committee on Banking and Currency opened its hearings on Chairman McFadden's Treasure, which would request the President to invite Great Britain and France to participate in an international conference on the exchange problem. Much fundamental data on the subject was presented to the committee by H. N. Lawrie, economist of the American Mining Congress, whose testimony laid emphasis upon the manner in which violent changes in foreign exchange result in hardships to importers when contracts were in importers' currency, and to importers when they were in exporters' currency.

Mr. Lawrie pointed out that any benefits which may follow the Conference on Limitation of Armament in reduction of military expenses should be reflected in benefits in exchange of the countries affected, but that under the present exchange system these benefits will be greatly impaired through speculation in exchange and other elements, and that these should be removed by the proposed investigation and terms definitely fixed for reflecting these benefits to their fullest extent. While the industrial prosperity of the country is dependent on the solution of the problem, Mr. Lawrie said the mining industry depends on export trade to sustain full time operation.

"The problem before the Exchange Conference," concluded Mr. Lawrie, "would be the elimination of speculation in exchange. Any proposed remedy should also reflect in the exchange rate the improvement or the weakness of the domestic financial position of a nation. It should reflect ability to increase gold reserves, decrease note circulation, balance fiscal budgets, decrease adverse trade balances, and all other sound improvements in financial conditions."

It is proposed that the Conference shall meet in Washington three months after the President extends the invitation, and that the American delegates shall report the results with recommendations to Congress.

NO CLOTURE ON COAL

By Geo. H. Cushing

CLOSE OBSERVERS AGREE that they have never known a time when there was so much unrest in the coal industry. Not only are worker and employer in an intensive warfare but all of the old feuds between groups have broken out afresh and are more bitter than ever known. Naturally, the accusation that the railroads are the author of coal's ills is revived with vigor. It is a ten-ring circus.

One superficial explanation is that the high prices brought unnecessary developments; we are busy eliminating the unnecessary mines; that accounts for the friction and the heat. That is part of the truth only.

Another superficial explanation is that the unrest in the coal trade is merely part of that uneasiness seen round the world. There is something in that, too, but it is not a complete answer.

There is something which goes much deeper and which a few incidents will help to make clear. On some twenty or more occasions within the last two years, occasions have arisen when someone had to appear—for an hour or two only—as the spokesman for the trade or for some small group within the trade. One of these occasions involved nothing more than a need to satisfy the desire of a certain city club for information about coal, and yet, in the latter case particularly and on all the occasions generally tremendous quarrels arose among the coal men over the selection of the temporary spokesman. On one occasion the strife was so bitter it became necessary to hire a lawyer at a good round sum. Since all those who wanted to speak could not be satisfied, the number of coal men suffering from heartburnings and unsatisfied ambitions was all out of proportion to the number of occasions. And, the successful candidates found themselves with but little honor from the events but with a large crop of new enemies on hand. The feeling has been so intense that on particularly notable occasions, a few disappointed aspirants have become physically sick from nursing an ingrowing grouch.

Since some of these lively incidents antedate the time when the trade was conscious of its overdevelopment, or when the whole world was thought to be restless, they point to a cause which lies far deeper than either of these facts. For the real explanation of the present phenomena we must dig much deeper; we must look for it in some great change which has taken place. Since coal men everywhere are breaking their hearts in a great struggle to get to the American people with their personal version of the coal story, it must be concluded that—to their minds at least—the great change has come in the attitude of the public toward coal.

It is common knowledge that before the war it was no honor to be a member of the coal trade. Indeed, it rather interfered with one's social and religious aspirations. No one thought, even of becoming the leader of it. A few such efforts had been made and all resulted disastrously. That was because the people had no lively concern about coal. Practically no one appreciated its importance to the nation. Certainly few coal men had any such a national view of their industry as would lead them to make today's sacrifice of friends and money to win tomorrow's glory. Five or ten years ago the coal business was rather contemptible, yielding as it did no profit and offering no prospect of glory.

It is significant that, at that time, it was supposed in America that the supply of coal in England was practically inexhaustible and that Great Britain had an unending monopoly of the world's coal market.

One of the big and sure results of the war was the disclosure of the many respects in which Great Britain's coal position is fundamentally weak.

Another big result of the war was the destruction of that power of the German Empire in the world markets which rested upon its control of the second most important supply of coal.

A third result of the war was the development of the fact that with respect to quantity, quality and price, the world had no truly dependable supply of coal outside of America.

I mean to say that because Great Britain has eliminated herself and because Germany has been forcefully ejected from the world market in any large way, the American coal industry has assumed a dignity which was wholly unknown to it in past.

The world is coming—slowly but surely—to understand that America has under its soil 52 percent of the world's supply of coal. It is beginning to appreciate that a great supply, sufficient for many generations, is of the highest quality and is available for world distribution.

By way of contrast, the world is beginning to appreciate that the second largest deposit of coal is in Canada. However, almost all of it is either of inferior quality or is unavailable to the world. The third largest deposit is in China but its coal is not only unavailable but its deposits are very badly faulted. Insignificant quantities only are now controlled by Great Britain and Germany. This leaves America master of the world's situation.

One of the lessons growing out of our effort to conquer world trade was:

The flag follows the coal and general trade follows the flag.

Coal, therefore, is the true pioneer in the world commercial exploits of any nation. Without supplies of coal to exchange for finished products, there is not much of either reciprocity or growth in world trade. Indeed, in an international sense, coal dominates industry.

Holding a commanding position in the world as a result of having coal, it is only natural that the coal industry should come to hold a commanding position in American life. This leads to a philosophical observation. It has never failed to happen that when a new source of great power appeared, men broke their hearts and wrecked their lives in an effort to annex that source of power. Always, men have tried to tie it to themselves that they might reap the glory which went with it.

This explains perfectly and yet simply, why some members of Congress stand ready to wreck a party or emasculate the constitution if thereby they may bring the coal industry under governmental control and appropriate its power and glory to themselves. They would hardly be human if they did not so aspire. Richard III murdered the two sons of Edward for a prize not one percent as rich or great.

If the politicians living lives remote from the coal industry have so quickly sensed its potentialities, and if they have, so soon, begun the struggle for mastery, it is only natural that ambitious coal men who have grown up with the industry, should be innoculated by the same fever. It is but natural, therefore, that ambitious coal men should struggle to occupy coveted positions in the coal industry. If, therefore, we have "wars and rumors of wars" over who shall speak for coal, and if we have heart burnings and physical sicknesses among men who are disappointed, it is nothing to be marveled at.

And yet it is true that, with this tremendous struggle for leadership underway, there are those who would close the public forum to certain men, both inside and outside the industry. That there are those who would limit the debate on coal, that their own ideas concerning it might the more easily prevail. Such a policy is, of course, foolish, because it is short sighted.

The plain truth is that coal has had neither a program nor a leader. The present unprecedented upheaval in the trade tends toward the creation of both. If the debate is not stopped by legislative enactment on one side or by a cloture rule among coal men on the other, it is reasonable to assume that in the course of a decade, we will have both a coal program and a recognized leadership. It is most likely that the leadership will go to the man who supplies the program.

While such a quarrel is in progress with such a tremendous outcome, likely, it would be little short of a crime if Congress should attempt to forestall the natural outcome by itself endeavoring to create a leadership and to make a program by statute. But, it would be equally destructive if the present leaders in the trade should—out of fear for their continued control—succeed in enforcing their cloture rule on debate. On the contrary, while the trade is still after a program or a leader, it is the act of greatest wisdom to allow the debate to go on, free and unlimited to the end. By that means, the advocates of definite ideas will gather adherents around themselves until their following amounts to a party. In this way, we may get several parties but we will, with the formation of each, be nearer to the conclusion and the goal.

It is obvious that when the soundness of any policy has been espoused by a considerable majority of the trade it may, with propriety, be said that we have both a program and a leadership. It follows that we can get neither if debate is stopped, either by legislative action or by a cloture rule within the industry.

TESTING OF METALS DIVULGES VALUABLE INFORMATION

RESULTS OF INVESTIGATIONS in connection with metallographic testing are summarized in a report recently issued by the Bureau of Standards. The conclusions reached in studying the properties of metallic materials under various conditions are grouped under the following headings: Thermal Analysis and Heat Treatment; Mechanical Working of Metals; Microscopy and Structure; Chemical and Metallurgical Factors; Conditions of Melting.

Particular attention was given during the investigations to the subject of coating steel for the prevention of corrosion. The Bureau's experts reached the conclusion that zinc coatings furnish the best protection, deposits secured from either cyanide or sulphate solutions being satisfactory. It was found, however, that use of the cyanide method possesses the advantage of "throwing" the deposit more effectively into deep depressions or over other irregularities of surface. Satisfactory zinc cyanide plating solutions can be secured by using zinc oxide to replace part or all of the zinc cyanide formerly used, it was discovered.

The Bureau has also developed methods of obtaining platinum and some of its alloys in states of exceptionally high purity, as a result of the investigations.

COAL WAGE ARBITRATION IS SOUGHT BY EARLY GOVERNMENT ACTION

THE GOVERNMENT already has deeply concerned itself in efforts to prevent a possible stoppage of coal production in connection with the expiration of coal wage agreements next March. This is indicated by early developments in which Secretary of Commerce Hoover has played a leading part.

Realizing that next year will find the country's industries in delicate stages following the first lengths of progress in emerging from depression, Mr. Hoover has been engaged for some time in laying plans which aim to prevent any unstabilization of conditions that might be contingent to expiration of the coal wage agreements.

The major portion of his plan is devoted to provision of a platform of arbitration upon which the question may be considered.

It has been reported that some operators have given expression of their willingness to participate in such an arbitration system. A group of coal men, present in Washington in connection with the unemployment conference, met Mr. Hoover some time ago and there is reason to believe that they agreed to settle controversial questions through an intermediary agency acting with leaders of the operators and miners.

Shortly after the operators met with Mr. Hoover, administration leaders sought to obtain foundation for a working plan by securing from leaders of the miners' union an outline of their position in regard to arbitration. The Central Committee of the United Mine Workers of America was called to Washington by President Harding and, headed by John L. Lewis, president of the union, it engaged in a protracted conference with the President, Secretary Hoover and Secretary of Labor Davis. The object sought by the administration was not immediately accomplished. The union officials could not give word on their proposed stand because of a resolution adopted at the Indianapolis convention of the union.

At the conclusion of the conference, Mr. Hoover issued the following statement.

"Owing to the situation of the miners' leaders as the result of the decision of the Indianapolis convention to defer discussions of the new agreement until after their February meeting, it has been impossible to come to any immediate arrangement.

"The conference with the miners was in sequence of discussions carried on with representatives of the coal operators under the auspices of the unemployment conference. The desire of the conference was to determine if steps could now be taken that would minimize the danger of stoppage in coal production at the expiration of the national agreements at the end of March by a prior undertaking to arbitrate any ultimate differences."

While the first general opinion might logically enough be inclined to the thought that the Commerce Department is operating beyond its sphere in laying plans in this connection, it is being pointed out that the efforts to lay plans for arbitration are an outcropping of the unemployment conference and, in a larger way, a part of the work by which Mr. Hoover's organization is undertaking to master the return of normal industrial conditions, and to provide assurances that they will remain on the planes which they gain following the recovery period.

Those who are in close touch with the situation are of the opinion that better progress will be made by treating the wage agreement subject in this wider scope than if it were to be handled as a mere matter of adjusting wages at a particular point.

SENATORIAL PRESENTATION OF FACTS URGES RELIEF FOR GOLD MINING INDUSTRY

PRESENTING BASIC STATEMENTS in favor of relief of the gold industry through the medium of the McFadden bill or similar legislation, Senator Tasker L. Oddie, of Nevada, has answered objections raised by Secretary of the Treasury Mellon. In a letter to the cabinet member, he analyzes the statements which Mr. Mellon advanced in support of his contention that necessity for this type of relief has passed. The Senator quotes reports of the Unemployment Conference to show that depression in the gold industry still exists, and lays emphasis upon the failure of commodity and labor prices to readjust themselves to the point where gold mining may once more become a gainful occupation.

Senator Oddie's support of the gold relief legislation brings to a focus the views of twenty-two senators who recently addressed a resolution to Secretary Mellon, asking that he outline his stand on the subject.

Answering the Secretary's statement that "it is difficult in these circumstances to see what special equity there is in your claim for a premium when costs are high," Senator Oddie says:

"The equity lies in the fact that in the case of the gold mining industry the die was cast—the investment was made. The loss of this investment was occasioned by the shutting down of the mines which was forced upon the industry because of a lack of governmental foresight in promptly providing a means for compensating the loss in purchasing power of the gold ounce in accordance with the index number; whereas, the investment in the jewelry business would not have been impaired in the least by payment of the excise imposed upon the manufacture of gold articles which could have been readily passed on to the consumer, as provided for in the legislation upon which your opinion has been asked."

"I fully appreciate that over a period of many years there may be a remote possibility that the purchasing power of the 1913 dollar will have returned," says Senator Oddie, "but I cannot conceive the possibility that the purchasing power of the dollar, in terms of material and labor utilized in the gold mining industry, will return in time to save the ore reserves from loss through caving in of mines which have been shut down and filled with water during the period 1916–1921." This statement is made in answer to Secretary Mellon's expression of opinion that as commodity prices return toward normal and costs become stabilized on a lower level, relief should gradually come, in the ordinary course of events, from the difficulties of which the gold mining industry has been complaining.

The wholesale price index number of the Bureau of Labor Statistics has been recently ascending over the low point established in June and still remains over 50 percent above the 1913 level. This condition is emphasized in the letter to Secretary Mellon, which reasserts the fact that "as the price level increases the economic pressure upon the gold mining industry will correspondingly increase."

Recent reports concerning the present conditions of the industry are quoted to lend stress to the necessity for relief.

The United States Geological Survey in the "Mineral Resources of the United States for 1920" makes the following comment with reference to the condition of the gold mining industry:

> "Gold mining continued in a greatly depressed condition, and the value of the country's output decreased to less than $50,000,000. Less than half of the gold mines of the country were active and some of the large mines were closed permanently."

Based upon reports of gold production for the first six months of 1921, a total production for this year will probably not exceed $40,000,000, a decrease of 20 percent from that of 1920. The President's Conference on Unemployment through its Committee on Emergency Measures in Mining recommended on October 13, 1921, as follows:

> "Gold mining suffers from the excessive cost of supplies and other items, and the value of the gold output being fixed as against material advances in cost has operated to restrict the employment of labor in gold mines."

"These are not signs of improvement but rather of further depression in the gold mining industry," says Senator Oddie.

"In the testimony of Governor Benjamin Strong of the Federal Reserve Bank of New York before the Joint Agricultural Commission of the Senate and House of Representives he stated that $100 thousand in gold in the bank reserves of the Federal Reserve System was equivalent to about $1.8 millions in terms of credit in the country banks of the nation. The $292 millions of "new gold" which was withdrawn from the monetary reserve for industrial consumption during and since the war would have been equivalent to an extension of credit to the country banks of $5.25 billions. Had this gold been available in September, 1920, a less restrictive policy of deflation could have been adopted with safety, which would not have imposed the burden that the agricultural and other industries of our nation have been forced to bear.

"The decline in our governmental revenue receipts is due largely to the falling off in export trade," he continues, "and yet the gold policy enunciated in your letter and which has been in effect both during and since the war has intensified the difficulties with which the Treasury Department is now confronted.

"Had it not been for the loss in our decreased gold production over this period, which has been minimized by the jewelers in their testimony before the Committee on Ways and Means of the House of Representatives, in their desire to guard their interests from the payment of this infinitesimal tax, an additional credit of $2,000,000,000 could have been available to our country banks, making a total credit which might have been extended by a more conservative gold policy of $7,250,000,000. This amount of credit was eliminated through the wasteful practices of our war and post-war periods. The consequences of this policy have not yet ceased to exist.

"In your communication you refer to the fact that the market for gold is international. There could, therefore, have been no embarrassment to the industrial consumers of gold if they had been forced to purchase their gold in the world's markets instead of having been allowed to remove it directly from the monetary reserve which serves as the basis of our credit and currency.

"I note particularly the paragraph in your letter which begins:

> "'The tax which the bill would impose upon the use of gold for non-monetary purposes, while in form a tax, would in fact put restrictions upon the free convertibility of the currency into gold. If gold could not be used except under heavy penalties, for anything else than money, its value would be impaired and there would be, in effect, a clog on the converti-

bility of the currency. One dollar in paper currency, in other words, would not buy one dollar's worth of gold, if the gold was to be used in the arts.'

"It is difficult for me to understand how such a conclusion could be drawn when the provisions of the bill expressly state that the tax proposed is to be collected only at the time of the sale of the finished product. This tax is, therefore, not imposed upon the bullion to be sold by the Mint to the industrial consumers of gold. Under the provisions of this bill the industrial consumers continue to obtain gold from the Mint at the monetary price which now prevails. There is no relation now between the sale price of a manufactured article containing gold to the cost of the raw material contained therein. Why, therefore, should the addition of this tax which would be a small fraction of the sale price of the gold article affect the free flow of gold or its convertibility?

"In France, since 1873, a special excise has been imposed upon the sale of manufactured articles containing gold. No disturbance to the free flow of gold or to the French Monetary System has ever resulted. This tax in June, 1920, was greatly increased. No difficulty has been experienced in France in collecting this tax and there should be no difficulty in collecting the tax here as it can be readily measured by the amount of gold contained."

A close analysis is made of Secretary Mellon's statement that "the monetary gold stock of the world has increased during the past ten years, it has been estimated, by as much as $2,000,000,000."

It is shown that the ratio of gold to notes in the fifty countries for which figures are available has dropped from 66.8 percent in 1914, to 9.3 percent in 1920, the point being emphasized that existing obligations arising from the need for currency redemption and the payments of debts and interest have eaten so deeply into the monetary stock that the increase cited by Mr Mellon is minimized as far as actual stock value is concerned.

In substantiation of his statement that "the world stands bankrupt today for lack of gold," Senator Oddie invites attention to the fact that experience gained since the termination of the war indicates that people will desire to return to pre-war monetary customs and that the preference which has developed for the use of paper notes will be replaced by a demand for the actual circulation of the gold. It is pointed out that the banks are expected to discourage the use of gold as currency and that this would seem to be evidence that there is by no means confidence that the people will not demand gold in circulation whenever the reserves are released.

In stressing the far-reaching influence which a small amount of gold exerts over the vital instrument of credit under the present banking system of the nation, it is stated that benefits in the way of a moderation of interest rates and lessening of credit tension which followed the additions of newly imported gold may be gained by a like amount of domestically produced gold, and without any danger of such a reduction of export trade as follows overbalance by the transfer of gold from other countries to the United States.

"The United States should occupy the position of trustee for this newly acquired gold," says Senator Oddie. "A redistribution of this gold is a prerequisite to restoring financial poise to the world and under such a policy we should not permit that gold to become the basis of our credit and currency structure as it could not then be released for export without forcing a rapid deflation." Federal Reserve reports are quoted to show that some of this newly acquired gold has already been made a part of our currency structure, although it must eventually find its way across the seas if international exchange stabilization is to be effected.

Failure to redistribute this gold among the nations from whence it came in order that they may appreciate their currencies to the gold standard level will force them to adopt some other unit, not as a matter of convenience but as a matter of necessity. Our continued position as a creditor nation is dependent upon the maintenance of the gold standard, it is emphasized.

Had not "new gold" been withdrawn from the monetary reserve for industrial consumption it would have been sufficient to more than replace the amount of gold lost by excesses of exportations over importations of gold into the United States during 1919, Senator Oddie declares. There would have been little need for putting into effect the drastic deflation measures adopted by the Federal Reserve Board as a last resort to preserve the gold reserve ratio from declining below the legal minimum prescribed in the Federal Reserve Act.

"The enactment of this proposed legislation will protect the public by insuring the quality of the article sold and will enable the public also to appraise the cost of the workmanship as well as the cost of the raw material," says Senator Oddie. "The provisions of the McFadden Bill impose no penalty on the purchase of foreign gold in this market to be used for non-monetary purposes, as the industrial consumers would continue to purchase their gold from the United States Mint at the free gold market price. For this reason a speculative market for gold could not develop.

"Furthermore, the cost of the premium provided in this legislation would not have fallen on the general public as a tax burden but would have been borne directly by the consumers of luxuries who have, it is presumed, the ability to pay.

"On the other hand, the government sold during this entire period of high prices $292,000,000 of 'new gold' to the industrial consumers at the pre-war price. In effect, is this not subsidizing the jewelers and other industrial consumers?

"The objection to employing artificial means to compensate for the lost purchasing power of the gold producer's dollar is answered by recalling that any price fixed by the government is artificial in character.

"The production of gold throughout the world is declining, and unrestricted industrial consumption for years to come would be so large as to reduce the amount available for monetary purposes. This condition must be remedied if the gold standard is to survive this period of readjustment. The industrial gold consumption of the world should, therefore, be forcibly curtailed and gold production stimulated. Both of these conditions should be satisfied by an equitable adjustment in the cost and price equation between the producer of new gold and the industrial consumer. The McFadden Bill provides for such an adjustment.

"This constructive gold policy put into effect at this time will safeguard the maintenance of the gold standard. Such a policy is also prerequisite to a more rapid revival of our domestic industry and export trade upon which the full time employment of our people and the prosperity of the nation depend."

Summing up the situation and outlining the manner in which a tax upon the industrial use of gold would effect a financial stabilization, Senator Oddie says:

"I am firmly convinced that if our gold reserve had been protected against this extraordinarily heavy industrial drain and a moderate deflation begun within a year after the Armistice, our present difficulties of depression would not only have been minimized but might never have occurred."

A BUG'S-EYE VIEW OF WASHINGTON

By Ira L. Smith

THE CURTAIN IS RISING on the greatest event of its sort ever shown on this or any other stage. The brains of the world are all set to get knotted up in efforts to chop off a slice of the millenium and parcel it out among the folks of our planet.

And may plans for armament limitation have more power, since their success will probably mean that we'll be able to toss the tax collector a thin dime or so and get away with it.

Grouped around the conference table, the delegates will never fail to be aware of the power of the pocketbook that balks eternally against being flattened out by dumping its contents into the maw of taxation.

Folks the world over are scratching and fidgeting around in their efforts to get enough shekels together to appease the governmental revenue collectors when they yelp at the door. The natives generally are aware that vast portions of their increment are used to sustain the armies and navies that wait for a grand duke to get shot or for some other excuse to present itself in order that their claws of steel may start to dig.

In days of yore, when men fared forth in tin suits to do their battling, the overhead expense was a mere infant. If a knight got his metal uniform punched, the chances were that he'd cash in his checks at the time, while some brother fighter would salvage the hardware and get it repaired at the nearest blacksmith's at little or no expense to anybody.

Medieval sea-fighting was just about the same sort of thing. A lot of fun and not much financial outlay. Ships rolled out over the briny deep, their captains made faces at each other, and then the whole thing was over. Even when they did get to the point where they used guns, their armament was about as effective as a Fourth of July cap-pistol without the caps.

But, dearie! How things have changed now!

It costs more to stage a war than to keep all the women of the world in clothes for an equivalent period.

Cable tolls on a message across the sea carrying a declaration of war are more costly than a whole year of fighting in old King Arthur's time.

All the ships of Admiral Olympus, or whoever ran the Greek navy back in the days when beefsteak sold for five cents a pound, didn't cost as much as one shot of the barking bunches of steel that they've been aiming at each other in more recent years.

"And who has to pay for it all?" queries the plain folk in general. Then they toss the answer back at themselves: "We do."

Whereupon old John J. Realization comes galloping along, opening a multitude of eyes in observation and mouths in protest.

So it has come to the place where the appeals that the constant enlargement of the machinery of war be shackled are growing. For the butcher, the baker and the rest of the gang have raised their shouters toward the high skies, begging that the burden of taxation be lightened.

Idealists have bucked war verbally for ages. Way back yonder when antedeluvians waged battles against each other, scribes who pounded out copy on stone parchment probably bespoke themselves somewhat on this order:

"Knowest not, oh chieftains, that breastplates and girdles and things are not to be found for sale at the bargain counters. And windows, broken by stones from the sling-shots of the enemy, must be replaced 'ere winter comes and causes our bones to rattle like the ice in a Scotch high-ball. Pray refrain from these unseemly pranks and let us have peace."

But fighting was just as much a prime element as eating in the make-ups of our far-distant ancestors. Perhaps it held more attraction for them, for was it not said of Hiram Hatchet-jaw, Chief of Staff of a Paleolithic army, that "He'd rather fight than eat."

It seems that the logic that always runs around to a greater or less degree wherever civilization hangs its derby is soon to have its say, howsoever.

Instincts must grow better when educational processes continue their quiet work through successive generations that pass along their good thoughts to the kids, who in turn moralize a lot before they give jobs to grave-diggers.

The whole idea of seeking limitation instead of complete disarmament is all to the roses so far as practicality is concerned. Even now, despite all our civilization, we are inclined to double up our fists and stick out our tongues occasionally, and any plan to send all our fighting tools to the international junk shop would be useless at present.

Wading along this channel brings to my slip of a mind the story of how an idealist got all bungled up in trying to hasten things along, without stopping to realize that educational foundations are necessary if ideals are to be obtained.

This man was handed the job of Commissioner of Safety in a western city where he had been holding forth as city editor of a morning paper. Old Dame Fortune is the only party who can explain how he came to get this berth, what with his Windsor tie and a temperament to match it, but at any rate there he was—boss of a lot of bluecoats.

So it came to pass that he ascended rapidly into the throne occupied by the chief mogul over all the cops, and so it also came to pass that he slid down out of the throne with all the speed of a choice bit of greased lightning.

The cause for his skidding was that he figured his high ideals were contagious and that, with his clean-cut morality at the helm of the city's guardianship, each thug would tie bits of baby ribbon to his trusty gun and hang it on the family mantle-piece.

So he issued an order that the Irish horde forming the city's police force should forthwith fare forth at night without their shillalahs.

The next morning found the alleys of the town piled sky-high with minions of the law who had been firmly tapped with so many blunt instruments by gents who refused to be reformed by the spectacle of policemen running at large without clubs.

Now, if the temperamental boss of the gang had substituted anything—even candy canes—for the night sticks, he would have had a chance to edge his idealism in sideways. For all anybody knows, the time might have arrived when the crooks, through gradual education, would have made love to policemen.

MINE MOTOR APPROVAL PROCEDURE

PROCEDURE for establishing a list of permissible electric motors for operation in gaseous mines is covered in a publication, known as "Schedule 2-B," recently issued by the Bureau of Mines. The Bureau has announced that it is prepared at its Pittsburgh Station to conduct tests of motors and their electrical accessories designed for mining purposes with a view of determining their permissibility in gaseous mines or dust-laden atmospheres.

WORLD'S COAL PRODUCTION SHOWS REACTION TO FEVERISH DEMAND

THE WORLD'S PRODUCTION of coal during the first six months of 1921 has shown a reaction in striking contrast to the feverish demand of 1920, heavy decreases reflecting the prostrated condition of world trade and industry. The British strike, of course, was a large factor in the curtailment of output.

Reports compiled by the Geological Survey place production for the first half of this year at approximately 525,300,000 metric tons, of which 42.23 percent, or 221,798,000 tons, was produced in the United States. These figures indicate an annual world production rate for 1921 of 1,050,000,000, which falls 250,000,000 tons below the 1920 total, and shows the output to be far below that of any year of the preceding decade.

"Prices have collapsed, and sea-borne coal trade has fallen off," says the Survey's report, which adds that these conditions are having a profound effect upon the volume of business offered to the world's shipping.

The following table summarizes the information received by the Geological Survey up to and including October 6, 1921, and is subject to revision as final official figures are received. Lignite and brown coal are included; where possible, they are given separately. The world total of 525,300,000 includes estimates for those countries, representing about 8.5 percent of the whole, for which no information was available. The figure used for these unknown countries was one-half the output of the latest year for which figures were obtainable, usually 1920.

PRODUCTION OF COAL IN PRINCIPAL COUNTRIES OF THE WORLD, JANUARY–JUNE, 1921.
(In metric tons of 2,204,622 lbs.)

Country		*Production*	*Percent of total production*
NORTH AMERICA:			
Canada		6,153,456	1.18
United States		221,798,000	42.23
Other Countries		(a)	0.06
SOUTH AMERICA		(a)	0.13
EUROPE:			
Austria—Coal		65,320	0.24
Lignite		1,181,920	
Belgium		10,624,740	2.03
Czechoslovak Republic—Coal	*b*	6,100,000	3.61
Lignite	*b*	12,900,000	
France—Coal		13,467,125	2.64
Lignite		371,930	
Germany—Coal	*c*	70,886,889	24.88
Lignite	*c*	59,787,867	
Poland	*b*	3,500,000	0.67
United Kingdom		55,349,730	10.54
Other countries		(a)	2.83
ASIA:			
Japan	*b*	12,800,000	2.44
Other countries		(a)	4.11
AFRICA:			
Rhodesia		242,809	0.04
Union of South Africa	*b*	5,100,000	0.95
Other countries		(a)	0.01
OCEANIA		(a)	1.41
TOTAL		525,300,000	100.00

(a) Estimate included in total. (*b*) Estimated for the six months' period from actual reports for the first three or four months. (*c*) Includes Saar and Upper Silesia

Discussing the probabilities for the last half of the present year, the Survey's experts state that "it is clear the output will be larger than in the first half, mainly because of resumption of operation by the British collieries."

Despite the promised increase, there is little hope that the total for the year will likely exceed 1,100,000,000 tons. Should production fail to reach a plane appreciably above this mark, it will have dropped back to the level of 1909. The relapse to 1909 production is even more significant when it is remembered that the world's consumption of coal normally increases by leaps and bounds and should now be far above the figure for the earlier year.

"Of the principal coal-producing nations, Germany made what may be regarded as the best showing for the six-month period," says the report. Production of bituminous coal in all districts, including Upper Silesia and the Saar basin, was at the rate of 141,000,000 tons per year, far short of pre-war performance, but the output of lignite showed an increase over 1913 amounting to almost 30,000,000 tons a year. Whereas in 1913 the German Empire supplied only 22 percent of the world's production of coal and lignite, its contribution in the first half of 1921 was 25 percent of the whole and this in spite of the return of Alsace-Lorraine to France.

COAL CONSERVATION IN MINING URGED BY EXPERT

COSTS OF BITUMINOUS coal, recognized as a factor of vital concern to the industrial rehabilitation of the nation, may be materially reduced by the employment of certain safety measures and the adoption of improved types of mining machinery and more modern mining methods, according to a statement by J. J. Rutledge, coal mining engineer of the Bureau of Mines.

The hazard in bituminous coal mining may be greatly lessened by the prohibition of the wasteful and dangerous practice of blasting coal off the solid and substituting therefor the method of undercutting the coal and blasting it loose by the use of "permissible explosives" instead of black powder, says Mr. Rutledge.

The necessity of leaving an excessive amount of coal underground to prevent the subsidence of valuable agricultural land on the surface has often contributed to the cost of coal production. To obviate this, Mr. Rutledge advocates the purchase by the coal-mining company of the overlying land instead of the practice of merely obtaining an option on underlying coal.

An improved method for the operation of coal mining machines is outlined. It is said machines which, under the present system, undercut from 40 to 100 tons per shift, should undercut from 300 to 500 tons per shift. In coal mines having a soft bottom clay, Mr. Rutledge suggests undercutting in the clay immediately under the coal seam instead of in the lowest portion of the seam itself.

By the use of machines which combine entry driving and loading operations, feasible in coal seams of a soft nature, and by employing improved mining methods, startling results should be obtained in the way of efficiency and reduction in costs.

ECONOMIES PROMISED TO COAL INDUSTRY BY NEW MINING LABORATORY

RESPONSIVE TO A DEMAND for additional laboratory space and equipment for the carrying on of research work and instruction in ceramics and coal-washing, the University of Washington has recently completed a new mining laboratory building, which was formally dedicated on September 23rd during the visit of H. Foster Bain, director of the United States Bureau of Mines, to the Northwest Experiment Station of the bureau at Seattle. When fully equipped, the building will, in the opinion of mining men, stand as one of the best arranged and most efficient laboratories to be found in the educational institutions of this country.

The new structure is the fourth building on the university campus to be devoted solely to mining and is the seventh completed building in the program instituted at the university in 1916. It is of steel frame construction and is to be used jointly by the School of Mines of the university and the Northwest experiment station of the Bureau of Mines.

Research in the new laboratories will be directed mainly towards the problems of coal washing and ceramics. It is expected that future work in the laboratories may include studies in electrometallurgy, in order that assistance may be given to the development and use of the vast amount of potential hydro-electric power in that state. Milnor Roberts, dean of the School of Mines and presiding officer at the dedication ceremonies, told of a plan to build, at some future time, an addition to the new laboratories, which will be devoted to the study of ore dressing.

NEW MINING LABORATORY BUILDING

This addition to the University of Washington is to house one of the finest mining laboratories in the world, where extensive studies seeking to evolve economies in the coal industry will be carried on

"Coal is the most important mineral resource of this state," Clyde E. Williams, superintendent of the federal experiment station on the campus, said at the dedication. "More than 50 percent of the business done is in coal. Due to peculiar geological conditions, coal deposits in this state are less easily mined and less easily prepared than in many other coal districts.

"The ceramic industry in Washington has not been developed to a very great extent. Representative clays are present in sufficient form and the Northwest can supply all the basic materials necessary to establish a ceramics industry capable of supplying the demand for clay products."

Speaking in a similar vein, Daniel Buckingham, representing the Coal Operators' Association of Washington, said that the coal industry in Washington supports an annual pay roll of $15,000,000. Washington coal veins, he said, are on a steep pitch, are usually narrow and contain a large amount of foreign matter. When this foreign matter has been eliminated and the coal prepared for market, it is just as good, he said, and cheaper than the coals which are being imported into the state.

Director Bain spoke at the dedication on the value of research, saying that nations which have ceased to make investigations have grown stagnant. He said that lowered building costs can result only from lowered production costs and spoke of a hope that the research work which will be carried on in the new laboratories jointly by government and college engineers will bring about lowered production costs. Congressman Marion E. Rhodes, chairman of the House of Representatives' mines and mining committee, said that the federal government should, in his opinion, stand ready to assist in the development of resources as well as in the conservation of resources.

The laboratory was formally dedicated by Dr. Henry Suzzallo, president of the University of Washington.

"Whatever we do at the University of Washington," he said, "we are going to do as well as any institution in the United States. The standards of scholarship have been constantly raised until, at the present time, no other educational institution in the United States has as rigid standards of scholarship as this university."

The prime object of coal washing studies at the Northwest experiment station of the Bureau of Mines is to devise coal washing methods that will prevent loss of good coal in the process of removing impurities and to devise methods which will easily and economically remove the dirt and render the coal suitable for commercial purposes. In working out this problem, co-operative studies have been made with twelve coal mining companies and gratifying results have been obtained. The plants at which these studies have been made were selected as being the most representative within the district in which each is located and as being the most modern and flexible, thus offering the greatest opportunity for experimental work.

The principal results of these studies have been to save large quantities of good coal formerly wasted and to improve the quality of the washed coal.

Study in one instance was made of enormous refuse piles to which, it was observed, a large amount of good coal was going in the washery refuse. Inasmuch as the coal from this mine, when properly cleaned, is an excellent coking coal and therefore a particularly valuable product in that district, it was considered worth while to study the feasibility of retreating these piles to recover the good coal. Although these tests are not yet completed, it has already been demonstrated that at least twenty percent of the material containing ten to eleven percent ash may be recovered by crushing to pass one quarter inch and washing on suitable coal washing tables. Based on an estimate of two million tons of material in these piles, it follows that, as a result of these tests, approximately 400,000 tons of excellent coking coal have been made available from a waste product.

In another instance, studies were made of a sludge pile, representing ten years' accumulation and estimated to contain approximately 200,000 tons of material. Samples from this pile were tested first by the float and sink method, a purely laboratory method, and then with an experimental coal washing table. The results of these tests showed a recovery of 70 percent, by weight, of washed coal containing 17 percent ash, out of raw material containing between 27 and 30 percent ash. It was later found possible to recover approximately 80 percent of washed coal containing not over 15 percent ash, indicating that approximately 160,000 tons of valuable fuel were made available from material formerly considered a waste product.

Lack of suitable equipment and facilities on the university campus made it necessary, in the past, to conduct most of the coal-washing studies at the plants of the different companies. This deficiency has now been eliminated and the experimental work will not be carried on in the new mining laboratory.

The new laboratory is being equipped to handle efficiently any quantity of coal up to a carload lot. Coal may be delivered in railroad cars onto the campus and to within 150 feet of the building. Only the most modern and efficient expermental equipment is being installed.

Coal may be delivered to the building by wagon or auto truck. On entering the building on the ground floor, it may either be weighed, sampled and crushed, or when desirable, screened to remove all material coarser than 2½ or 3 inches diameters. The oversize may be sorted on a picking table into two or more products, and these put into separate bins which are flush with the floor and discharge into a coarse crusher in the basement. After being crushed to 2½ inch size or smaller, these products may be mixed back with the undersize from the screen and elevated by bucket elevator, or they may be kept separate and elevated to any floor above on the frieght elevator.

The undersize from the screen drops into a 30-ton raw coal bin from which it is drawn and elevated by bucket elevator to the top of the building. There it discharges onto an automatic sampler and then onto a balanced 4-deck shaker screen with interchangeable screens. The different sizes obtained from these screens are discharged into portable buggies, and, after weighing, may be delivered to any of the eight 5-ton bins suspended from and flush with the top floor. From these bins, the coal may be drawn by gravity to any one of the various experimental machines on the main testing floor, which is immediately above the ground floor. The various products from the testing machines on this floor may be delivered by gravity to any one of a number of tanks on the ground floor.

The list of testing equipment on the main testing floor includes two coarse-coal jigs, semi-commercial size, one movable-screen type and one fixed screen type; two fine-coal jigs, semi-commercial size, one Harz or plunger-type jig and one pulsator-type jig; two full-size coal-washing tables of different types; one or two experimental-size coal-washing tables; also, several small pilot or laboratory jigs and tables. There will also be one or two experimental froth flotation machines on this floor for testing coal. The mechanic's tool and work room is also on this floor.

On the top floor, in addition to the screens, elevator, and sampler, will be two 1000-gallon water tanks, storage space for screens, pipe, and samples, scales and other testing equipment. Separate rooms are located on the third floor for float-and-sink work, chemical analyses, calorimeter tests, laboratory classes of the School of Mines in metallurgical fuels and two small offices for the Bureau of Mines and School of Mines staff. Space is also provided on this floor for by-product coking tests, and for a hydraulic classifier of the Dorr type.

The main sampling floor and sample-grinding room are located on the ground floor. Ample space is also provided on this floor for a centrifugal dryer, suction filter, air-drying oven, steam coil dryers, scales and the necessary settling tanks. The building is sixty feet wide and eighty feet long and approximately 53 feet high above the ground floor.

The Washington State Geological Survey has collected samples of clay and studied deposits, while the ceramic department of the school of Mines has tested 274 samples according to the standard methods of testing of the American Ceramic Society. Almost every variety of clay was found in the state and it was demonstrated that the Pacific Northwest can become virtually independent for ceramic materials.

The ceramics portion of the laboratories will be equipped with apparatus which will make possible virtually all the testing work for structural wares, refractories, pottery, enameled metals, abrasives, cements, limes and plasters and thermal insulators. The ceramics portion, as well as the coal-washing part, is built according to plans designed jointly by the staff of the School of Mines and officials of the federal Bureau of Mines.

FUEL ECONOMIES FORM CHIEF AIM OF CERAMIC AGREEMENT

THE CO-OPERATIVE agreement between the Bureau of Mines and the four leading heavy clay products associations for the investigation of kiln processes has been completed. The program under which the agreement will operate will have as its main aim the effecting of fuel economies in burning processes. It will also include efforts toward increasing efficiency and minimizing breakage losses.

All laboratory work to be carried on under the agreement will be done at the Ceramics Station of the Bureau, located at Columbus, Ohio. Several additional experts have already been assigned to the station's staff in anticipation of the large amount of work to be undertaken.

It is expected that the first reports of the investigation's results will not be available before at least six months, but as improved methods of operation are brought to light, they will be adopted by the members of the four associations, producing one half the output of the ceramic industry with a valuation of $75,000,000 annually.

CENSUS BUREAU ISSUES STATISTICAL REPORT ON THE MINING INDUSTRIES

RESULTS OF THE 1920 CENSUS of mines, quarries and wells, covering 1919, have been announced by the Census Bureau, furnishing statistics of the number of enterprises, number of individual operations carried on, average number of wage earners employed, total horse power used, and value of products for the producing enterprises in the mineral industries.

These statistics cover only enterprises that were productive, with an output valued at more than $500, or, in the case of bituminous coal mining industry, amounting to more than 1000 tons of coal.

The term enterprise as used in this summary represents one or more mines, quarries, and wells or groups of wells or natural-gas-gasoline plants, all within the same state, operated under a common ownership or unified control, and for which a single report was secured. The enterprise is further defined as being limited to a single mining industry.

The statistics on power used represent the total horsepower of prime movers used by the enterprise plus horsepower of other equipment, principally electric motors operated by power purchased. The figures represent rated capacity of engines, motors, etc., and not the amount of power in actual daily use.

Census of Mines and Quarries, Summary for the United States, by Industries: 1919

	Enterprises	Number of mines, quarries, or wells	Wage earners (average number)	Power used (horsepower)	Value of products
All industries	21,280	....	981,560	6,723,786	$3,158,463,000
Fuels					
Coal:					
Anthracite[1]	254[2]	534[3]	147,372	899,783	$364,084,000
Bituminous	6,636	8,316	545,798	2,155,412	1,145,977,000
Petroleum and natural gas[4]	9,814	260,673[5]	93,205	1,821,342	931,793,000
Metals					
Iron ore	290	472	45,741	370,869	218,217,000
Copper[6]	195[6]	226	43,717	523,591	181,258,000
Gold and silver:					
Lode mines[6]	740[6]	799	15,436	149,680	58,832,000
Placer mines	112	132	1,380	35,632	9,368,000
Lead and zinc[6]	432[6]	473	21,884	229,541	75,579,000
Manganese	35	37	909	5,800	2,188,000
Quicksilver	26	26	748	2,607	1,803,000
Rare metals[7]	22	22	633	3,544	1,725,000
Stone					
Basalt	163	174	3,336	37,307	9,657,000
Granite	358	381	8,049	55,674	18,279,000
Limestone[8]	895	925	22,069	213,717	52,943,000
Marble	48	62	1,732	15,628	4,397,000
Sandstone	255	276	4,287	33,869	10,684,000
Slate	101	104	3,513	20,613	5,720,000
Miscellaneous					
Abrasive materials[9]	34	34	317	1,748	721,000
Asbestos	10	11	146	420	249,000
Asphalt	9	12	324	648	749,000
Barytes	89	98	919	3,029	1,592,000
Bauxite	10	15	738	2,507	2,190,000
Chromite	15	16	31	136	105,000
Clay[10]	344	349	5,442	21,218	10,053,000
Feldspar	30	32	349	1,782	584,000
Fluorspar	54	72	1,124	7,138	3,334,000
Fullers earth	9	9	824	2,538	2,019,000
Graphite	21	24	419	6,410	869,000
Gypsum	47	48	2,191	15,032	6,805,000
Magnesite	11	11	448	2,540	2,169,000
Mica	65	69	448	803	607,000
Millstones	11	11	37	220	64,000
Mineral pigments	23	23	185	1,630	480,000
Phosphate rock	48	69	4,373	49,639	10,300,000
Pyrite	17	18	1,172	7,338	2,408,000
Silica	25	30	177	2,057	404,000
Sulphur	4	4	1,129	15,291	17,935,000
Talc and soapstone	28	30	958	7,053	2,302,000

[1] Pennsylvania only

[2] Operating units or "collieries" embracing mines and breakers, also washeries and river dredges.

[3] "Plants" embracing 374 mines, 79 washeries, and 81 dredges but not counting 245 breakers operated in connection with mines.

[4] Includes natural-gas gasoline: 1,117 plants.

[5] Productive petroleum and natural-gas wells, December 31, 1919.

[6] Includes reduction mills operated in connection with and independently of mines, and operations on old dumps and tailings.

[7] Includes antimony, molybdenum, tin, titanium, tungsten, uranium and vanadium.

[8] Not including enterprises producing limestone for their own use at the quarries in the manufacture of lime.

[9] Includes enterprises producing emery, garnet, pumice, tripoli, diatomaceous earth, stone for hones, scythestones, whetstones, etc., and tube mill pebbles and liners.

[10] Does not include enterprises producing clay for their own use at the mines in the manufacture of clay products.

BUREAU OF MINES INVESTIGATIONS COVER WIDE RANGE

WIDE RANGES of activity and high value to various branches of the mining industry are indicated in a summary issued by the Bureau of Mines, covering its investigations that are now under way.

The Bureau is conducting an investigation in the Nevada gold mining fields of the use of gunite in metal mines. The possibility of the cement gun being used in the preventing or minimizing of rock bursts in deep metal mines is being given attention.

Employing co-operative funds furnished by the State of Missouri, an investigation relating to the electrothermic metallurgy of zinc is under way at the Mississippi Valley Experiment Station of the Bureau at Rolla, Mo. The physics and chemistry of the condensation of zinc vapor will be studied especially.

Encouraging results have been obtained at the same station in the flotation of sludge table concentrates from the Wisconsin zinc district. Work is being done on the distillation and fractionation of certain crude pinewood oils in the hope of finding a substitute for the oil used in the Wisconsin zinc flotation work.

An inspection of the mills in the Missouri-Kansas-Oklahoma lead and zinc district is being made by engineers of the Bureau of Mines with a view to determining their general procedure and gathering data as to different phases of the milling practice that may be most amenable to improvement.

At the North Central Experiment Station in Minneapolis investigations regarding drill steel and carbon steel and the reduction of iron oxide are under way. At this station, the problem of the flow of heat from the walls into the charge of a by-product coke oven has been solved analytically, and the rather tedious numerical solution of the values of the Fourier's series involved is nearly complete.

Results of work done at the Northwest Experiment Station in Seattle, Wash., indicate that fine grinding of sponge iron and wet magnetic concentration give a higher recovery of metallic iron than dry magnetic concentration on either coarse or fine material and that dry magnetic concentration is not improved by fine grinding. In melting sponge iron in a direct arc furnace using amorphous carbon as a carburizer, 2½% carbon is readily reached with a practical limit of 3%. Using graphitized carbon as a carburizer, 3% carbon is readily attained and 4½% is easily possible.

COAL STOCK DATA TO BE COMPILED UNDER NEW SYSTEM

REPORTS of coal stocks held by public utilities and other leading consumers are to be issued at regular intervals of probably sixty or ninety days by the Bureau of the Census working in co-operation with the Geological Survey. This plan is the result of several conferences held between representatives of the two bureaus and insures an added efficiency in handling statistics of this type through the enlarged machine rendered available in the census-gathering organization, with the experience of the Survey's experts supplying the more technical needs of the work.

Under the new system, details of which still remain to be worked out, it is proposed that the Bureau of the Census collect data from practically all the larger consumers excepting the public utilities plants, from which the Survey will continue to gather statistics as it has in the past.

OIL AND GAS TAX REGULATIONS IN REVISED COMPILATION

REALIZING THAT A MULTITUDE of revisions have radically changed the original revenue statutes applying to administration of internal revenue regulations in their relations to the oil and gas producing industries, the Bureau of Internal Revenue has issued a revised manual which incorporates all changes made to date in the original provisions affecting these industries.

Since the publication of the original manual, a number of Treasury Rulings have been rendered; much additional information regarding the estimation of oil reserves has been collected, studied and prepared for publication; also a large amount of data collected and tabulated relating to the number of wells drilled, thus establishing a dry-hole hazard for various districts and fields.

On account of the demand for this additional information, the Revised Manual has been issued to assist the taxpayer of the oil and gas industry to prepare his federal tax returns correctly and expeditiously. Although endeavor has been made to anticipate all questions that may be asked regarding the law and regulations, and the latter have been amplified when it was deemed necessary to obtain the desired result, it is recognized that such a manual is only general and cannot cover all information gathered by engineers, geologists and other technologists, the object being to establish a basis for arriving at valuation, depletion and depreciation in connection with the oil and gas industry.

Records of production of thousands of properties scattered throughout all fields in the United States were carefully classified and studied by experienced engineers with the result that average future production curves and tables are available for practically every producing district in the United States.

MINE TIMBER PRESERVATION

CONCRETE SUGGESTIONS for preservation of mine timbers have been sent broadcast by the Bureau of Mines following a series of intensive studies in which it has been engaged with the co-operation of the Department of Agriculture's Forest Products Laboratory.

Mine costs may be substantially reduced, says the Bureau, if careful attention is paid to the seasoning and peeling processes. Seasoning timber increases the strength and durability; decreases the weight; protects from insects and decay, and makes the timber more easily susceptible to preservative treatment. Peeling lays the basis for the same practical results.

GOLD AND SILVER PRODUCTION DROP SHOWN IN FINAL FIGURES

PRODUCTION OF GOLD in the United States during 1920 was 2,476,166 ounces, valued at $51,186,900. Silver production for the same period was 55,361,573 ounces, valued at $60,801,955, the average valuation of $1.09827 being used in securing the total. These are the final figures issued by the Bureau of the Mint, working in co-operation with the Geological Survey.

Reductions are indicated in production of both gold and silver as compared with 1919, the differences being $9,146,500 in value of gold produced and 1,320,872 ounces of silver.

RESEARCH WORK IN SMELTER OPERATIONS

Interest for the mining fraternity is held by this statement of scientific facts covering research work at the United Verde Smelter, Clarksdale, Ariz. This article was prepared by Mr. Charles R. Kusell, metallurgist, United Verde Copper Company, and was presented as a paper before the last quarterly meeting of the Arizona Chapter of the American Mining Congress.

THE UNITED VERDE Smelter requires, like all other smelters, continual investigation of the processes in use with a view to reducing costs by reducing losses of values, fuel consumption, inefficiency of mechanical equipment, etc. Aside from these problems of improving current practice there are several worth while problems to solve in connection with the conversion of waste products to valuable by-products. The management has indulgently allowed us to investigate some of these problems and these investigations are referred to as "research work."

The first investigation of importance was the determination of dust and fume losses in the waste gases. This work was carried on in co-operation with the Western Precipitation Company and the results disclosed the avenue of escape of the hitherto unaccountable losses of values. The sum total of these values was sufficent to justify the erection of a million dollar Cotterell plant for the precipitation and recovery of the dust and fumes in the gases. This plant which is now under construction is novel in that it includes three different types of Cotterell treaters arranged in parallel. The total capacity will be 800,000 cu. ft. of gases per minute. One half of this will be handled by down draft vertical pipes twelve inches in diameter; one quarter by the Tooele straight line horizontal type utilizing sheets of corrugated iron for the receiving electrodes; and the fourth quarter by a modified Hayden straight line horizontal type using chain screens for the receiving electrodes.

The straight line treaters are cheaper to construct and it has been demonstrated at Tooele and Hayden that they are efficient on easily treatable gases such as roaster gases. It was not known how efficient this type would be on the more difficult gases from the blast furnaces and converters and as a precaution enough capacity in the pipe type was decided upon. The whole installation is so arranged that the gases may be treated separately or mixed. As the expense of building return flues to the old stack was not much below the cost of a new chimney, the latter was decided upon. It is expected that operation of this will yield much interesting and valuable data besides being a profitable investment.

Analysis of products precipitated in an experimental Cotterell apparatus revealed that a large portion of the zinc, which is present to the extent of 1 to 3% in the ore smelted, is concentrated in the blast furnace and converter fumes. As a result, research work was started on the possibility of getting the zinc out of the system in the form of some valuable by-product. After a survey of the market for zinc products, it appeared that "Lithopone" presented the greatest possibilities. Lithopone is made by precipitating a pure solution of zinc sulphate with a solution of barium sulphide, and the resulting white product is zinc sulphide and barium sulphate. It is used principally as a paint pigment, and a constituent of mechanical rubber goods, other minor uses being in the manufacture of paper, linoleum, oilcloth and window shade cloth. Although it only contains a little over 20% zinc, it has been commanding a higher price than metallic zinc or spelter. Laboratory investigation finally yielded good results in the treatment of the fume from the Cotterell process in the preparation and purification of a zinc sulphate solution and in the subsequent steps to make a good grade of "Lithopone." The quality of the zinc sulphate solution is the same as is required for the manufacture of electrolytic zinc, and with the advent of cheap hydro-electric power, a "Lithopone" plant could be converted to an electrolytic zinc plant.

The treatment of the fume for recovery of the zinc as "Lithopone" will tend to concentrate any other valuable metals, the recovery of some of which may require research work at future date. Before a commercial plant is built, it is proposed to construct and operate one on a "pilot" scale to check the laboratory results.

Another field of research which seems alluring is the problem of selective flotation of heavy sulphide ores, which are plentiful in the United Verde mine. Mineralogically the ores are chalcopyrite in a gangue of pyrite plus a little silicious material. The problem is to produce from such ores as may be too low in copper to smelt, a concentrate which shall be self-fluxing and high enough in copper to smelt profitably, and a tailing which shall be low in copper but high enough in iron and sulphur to make it worth while saving for the profitable use of a future generation.

Progress in the separation of chalcopyrite and pyrite has already been made by several other companies, particularly the Utah Con. and Granby. Application of their methods to the United Verde ore did not yield satisfactory results, which apparent inconsistency is a well known peculiarity of concentration by flotation. Therefore it was decided to make synthetic ore by mixing finely ground samples of the two minerals, which were obtained from the mine, in such proportions that in analysis it resembles the ore being investigated but was one in which the two minerals were known to be free and only mechanically mixed. By experimental trials a combination of flotation reagents was found which would make a satisfactory separation and the same group, with occasional variations, was applied to the actual ore with immediately encouraging results. Grades of heavy sulphide ore containing from 1.0% to 6.0% copper have been tested. It was found that a tailing as low as .24% copper could be obtained from the 1.0% ore while it was difficult to reduce the copper content of the tailing from the 6.0% ore low enough to equal the recovery made by smelting. In the case of ore running about 3.0% it was possible to make 90.0% recovery with a ratio of concentration of three into one, the copper in the concentrate being 8.0% and in the tailing 0.45%. The silver content of the ore was 0.65 oz. per ton, 55% of which was recovered. Experiments are still being carried on to increase the grade of the concentrate by regrinding and refloating the leaner portion of the froth. Attention is also being given to the silver which seems to be more difficult to separate from the pyrite than the copper. The gold content is so low that it is not practical to make sufficiently accurate assays to indicate the correct recovery. We think that there is very little concentration of the gold.

Many metallurgists have toyed with the possibilities of making iron and steel from smelter slags and have not proceeded with their ideas because of the lack of market for the product if successfully obtained. However, the day is surely coming when there will be a market for all the iron, great as the quantity is, that is now wasted by the copper smelters. The amount wasted in Arizona alone in normal times is sufficient to supply a large steel industry.

Molten slag containing 30 to 40% iron unencumbered with mining and transportation costs surely presents an alluring aspect, and its successful reduction seems worthy of the expense of considerable effort. When operations are resumed we hope to be able to carry out some experimental work on a large scale to reduce the iron in the slag. We have in mind the treatment of a charge of several tons of molten slag in a regular copper converter in which all of the regular tuyeres will be closed excepting just enough to permit the introduction of powdered coal and limestone by means of a limited amount of blast aid. The coal and limestone will provide the reduction agent and flux. A second row of tuyeres, which will not at any time be submerged, will supply air for the secondary combustion of the volatile matter of the coal, this secondary combustion taking place directly above the bath and serving to keep the temperature at a point necessary for the fluidity of the slag.

The manufacture of sulphuric acid has already been successfully established as a smelter by-product industry by several copper companies, but only a small portion of the available sulphur is thus absorbed. One cannot help thinking that when the energy of the Colorado becomes available, Arizona's wealth of potential resources, among which are those we have discussed, must be developed and the Southwest will be well on its way to a position as one of the busiest sections of the United States.

TAX MEASURE IS SUBJECT OF EFFORTS TO HASTEN ACTION

ENACTMENT of the revised tax bill by early November was the goal of Congress in order that the Treasury Department might be able to complete preparation and issuance of new schedules of returns early in 1922. This is made necessary because certain reductions in taxes for the calendar year 1921 are contained in the tax bill, and it will be necessary for the Department to issue revised forms of tax returns which must be turned in by the taxpayer March 15. The month was marked by changes in tax proposals resulting from conferences of senators who dissented from the taxes as agreed to by the Finance Committee. These changes will benefit the mining industry to some extent as they include the repeal, on January 1 next, of the taxes on freight, and on oil shipped by pipe line. On the other hand the minimum surtax rates are increased from 32 percent to 50 percent.

Consideration of the tax bill was delayed by discussion of the peace treaties. On October 18 the Senate ratified treaties with Germany, thereby terminating the state of war which existed since April 7, 1917.

Hearings on the permanent tariff revision bill, which were suspended by the Senate Finance Committee, on August 27, were to be resumed November 1, with representatives of agricultural interests presenting testimony. It has not yet been determined whether other schedules of the tariff will be the subject of hearings at this time as all rates are dependent upon the American valuation plan, which is being investigated by Treasury and Tariff Commission experts, whose reports are awaited by the Committee. The emergency tariff law and the dye control act, which expires November 27, will be extended until February 1, by which time it is hoped the revised tariff bill will be enacted.

Senator Oddie, of Nevada, and twenty-one other western senators are urging the McFadden gold excise and premium bill. The House Committee on Banking and Currency heard Dr. H. N. Lawrie of the American Mining Congress on a proposed conference between representatives of the United States, England, and France on stabilization of exchange.

No action has yet been taken by the House on the bill already passed by the Senate to liberalize the war minerals relief act, but this measure is on the House calendar subject to consideration at any time.

New coal regulation bills have been introduced by Senator Kenyon, of Iowa; one along the lines of the old Calder regulation bill, and the other which seeks to limit coal profits, by prescribing certain margins, above which the act would declare them "profiteering" prices.

The following bills of importance to the mining industry have been introduced since our last issue:

COAL (PROFITEERING)

S. 2558. Introduced by MR. KENYON. (To define and punish profiteering in dealing in coal.) The bill provides for a fine of not less than $100 or more than $10,000 for the first offense, and for each succeeding offense the punishment shall be by fine of not less than $1,000, and by imprisonment for the person convicted of not less than ninety days nor more than five years. Section 2 defines the word "Profiteer" as charging or exacting excessive or unreasonable prices for coal. Section 3 provides that sales of coal yielding a margin in excess of the following rates shall be prima facie evidence of coal profiteering: On any sale by any operator selling not more than one thousand tons in any month, 50 cents per ton; on any sale by any operator selling more than one thousand tons and not more than five thousand tons in any month, 50 cents per ton up to one thousand tons, and 35 cents per ton on all over one thousand tons; on any sale by any operator selling in excess of five thousand tons per month, 35 cents per ton up to five thousand and 30 cents per ton on all over five thousand tons; on the aggregate sales for any fiscal year by any operator selling less than twelve thousand tons per year, 40 cents per ton; on the aggregate sales for any fiscal year by any operator selling more than twelve thousand tons and less than sixty thousand tons per year, 40 cents per ton up to twelve thousand tons and 30 cents per ton for all over twelve thousand tons; on the aggregate sales of any operator selling in excess of sixty thousand tons per year, 25 cents per ton; on any sale other than the original sales of coal mined by operators in which the amount of the sales exceeds one ton and not more than five tons, 40 cents per ton, where the sales exceed thirty tons, 20 cents per ton; on the aggregate sales for any fiscal year by dealers other than the first sales of coal mined by operators, where such sales do not exceed twelve thousand tons per year, 40 cents per ton, where the aggregate sales exceed twelve thousand tons per year but do not exceed sixty thousand tons per year, 40 cents per ton up to twelve thousand tons, and 25 cents per ton on all above twelve thousand tons where the aggregate sales for any fiscal year exceed sixty thousand tons, 12½ cents per ton; on any royalty contract where the amount mined does not exceed one thousand tons per month, 25 cents per ton, where the amount exceeds one thousand tons per month, 10 cents per ton.

S. 2557. Introduced by MR. KENYON. This bill is to be known as the Federal Coal Act. It is substantially the same as the Calder and Newton bills, both of which have been reviewed in the MINING CONGRESS JOURNAL, with the exception that the bill includes reports to be obtained by the Federal Trade Commission as to exports of coal, and requires the Commission to obtain information on costs. It also directs the Commission to report to Congress findings and recommendations obtained on investigations conducted by it under section 4. Another new provision requires reports to the Commission by coal associations and investigations by the Commission and report to Congress concerning their activities. The bill eliminated section 10 of the Newton Bill which required licensing of operators and dealers. A new provision authorizes the Secretary of Labor to investigate wages for miners and other employes by classes, miners' wages to be shown less operating expenses such as blasting, blacksmithing, etc.

H. R. 8421. Introduced by Mr. Herrick; referred to the Committee on Banking and Currency. This bill makes it unlawful for any private individual, firm, company, or corporation to issue tokens, due bills, coupons, or script as a substitute for money. It exempts notes, mortgages, etc., but specifically states that it applies solely to the issuance of these substitutes where the recipient is required to spend the same with the party, firm, company, or corporation, etc., issuing them, except tickets issued for transportation and sold for cash. A fine of $1,000 and imprisonment for one year are imposed for violation.

H. R. 8405. Introduced by Mr. Newton of Minnesota; referred to the Committee on Interstate and Foreign Commerce. The bill is to be known as the Federal Coal Act and its general purpose is the authorization for gathering information respective to ownership, production, distribution, costs, sales, and profits in the coal industry and the publication thereof and to recognize and declare coal and its production and distribution charged with public interest and use. Section 2 of the bill declares that coal and its sufficient and economical production and distribution, including information as to ownership, costs, sales, and profits, are necessary to the public health and general welfare of the people and to members of Congress for the purpose of legislating from time to time respecting interstate and foreign commerce, public health, taxation, and other matters and it is, therefore, declared that same be charged with public interest and use. Section 4 authorizes the Federal Trade Commission to currently require, secure, and compile reports respecting ownership, production, distribution, stocks, investments, costs, sales, margins, and profits in the coal industry and trade from persons or corporations interested in the production, sale, storage, or distribution of coal. The information is to be classified, first, as to the investment actually used currently in the business of producing, selling, or distributing coal; second, investment in land or other items, including expenses incidental thereto, held for future use or development; and third, other investments, not directly used in the production, sale or distribution of coal, and may investigate from time to time the organization, business, conduct, practices, and management of such persons and corporations, including also any corporation acting as a holding company for or guarantor of the stock of any such corporation and including also any partnership acting in a capacity analogous to that of such a holding company, and also the organization, business, conduct, practices, and management of owners of coal lands, and report its findings and recommendations thereon to Congress, and shall from time to time investigate and report as to all financial interrelations, including contracts, between owners, operators, or dealers or any of them, or other persons or corporations, in so far as may be necessary to determine (a) the full profits of owners, operators, or dealers; (b) the existence of any combination or relationship which may tend to lessen competition or to create a monopoly in the coal industry and trade.

This bill is practically identical with the Calder Bill, which was introduced in the Sixty-Sixth Congress and which was reviewed in the February issue of the Mining Congress Journal.

IMMIGRATION

H. R. 8525. Introduced by Mr. Raker; referred to the Committee on Immigration and Naturalization. (Amending the act to limit immigration.) The bill amends Section 5 of the Immigration Act and provides that the amendment shall take effect fifteen days after its enactment and shall continue in force until June 30, 1924, and the number of aliens of any nationality who may be admitted during the remaining period of the current fiscal year, from the date when this act becomes effective to June 30, shall be limited in proportion to the number admissible during the fiscal year 1922. Section 6 of the bill is amended to provide that it shall be unlawful for any person, including any transportation company, or the owner, master, agent, or consignee of any vessel to bring to the United States, either from a foreign country or any insular possession of the United States, any alien not admissible under the terms of this act, and if it shall appear to the satisfaction of the Secretary of Labor that any alien, not admissible under the terms of this act, has been so brought, such person or transportation company, or the master, etc., of any vessel, shall pay to the collector of customs of the customs district in which the port of arrival is located the sum of $100 for each alien so brought. And no vessel shall be granted clearance papers pending the determination of the question of the liability to the payment of such fine, or while the fine remains unpaid, and such fine shall not be remitted or refunded: Provided, that clearance may be granted prior to the determination of such question upon the deposit of a sum sufficient to cover such fine.

H. R. 8727. Introduced by Mr. Johnson; referred to the Committee on Immigration and Naturalization. The bill provides for the guidance and protection, the better economic distribution, and the better adjustment of the foreign-born residents of the United States, to repeal all laws heretofore enacted relating to the naturalization of aliens, and to establish a uniform system for the naturalization of aliens throughout the United States, and to create a Bureau of Citizenship in the Department of Labor, and for other purposes.

OIL

S. Res. 138. Introduced by Mr. Harreld; referred to the Committee on Commerce. The resolution reads as follows: Whereas it has been charged by the independent oil producers of the United States that there is a monopoly controlling the production of crude petroleum, the refining of same, and the marketing of its products, and that this monopoly is manipulating the markets thereof in such a way as to force into bankruptcy the twenty-one thousand independent producers in order that it may buy up their properties and thus further monopolize the industry; and that in order to bring about this condition the monopoly is dumping upon the markets of this country such quantities of Mexican output of crude petroleum which it controls as will break the markets of the independents and in violation of the Antidumping Act; and that a conspiracy exists between persons, companies, etc., to bring about this condition in violation of the laws of this country, etc. In order to relieve this situation, it is resolved that the Federal Trade Commission investigate and report to the Senate its findings of fact on the following questions: (1) Does a monopoly or monopolies exist having for their purpose the acquiring of the pipe lines, producing properties, and refineries, which are connected with the petroleum industry in order to create a monopoly? (2) Does there exist a conspiracy among persons, companies, etc., to acquire control of the producing properties, pipe lines, and refineries of the independent producers of crude petroleum and to control prices of crude petroleum and its products? (3) If such monopoly or conspiracy exists, what persons, companies, etc., are engaged in the effort to create such a monopoly? (4) To what extent have the pipe lines used in the transportation of crude oil and controlling the price of crude petroleum and its products been acquired, owned, held, and controlled by such persons, firms, or corporations as are engaged in the effort to monopolize the industry? (5) Does the importation of crude petroleum and its products from Mexico into the United States affect the production, refining, and marketing of the independent producers of the United States? If so, to what extent? (6) To what extent has the group of oil producers known as the Standard Oil group, the Royal Dutch Shell group, and the Doheny group of oil producers borrowed from the Federal reserve banks of the United States funds with which to purchase oil-producing properties, etc., and to what extent have they made such purchase during the current year of 1921 and to what extent have they accumulated funds from other sources for that purpose? (7) To what extent have the pipe-line companies acquired control of producing properties and of production, giving names of pipe line companies and their holdings? The Federal Trade Commission is directed to report the result of its investigations to the Senate not later than December 15, 1921.

H. R. 8344. Introduced by Mr. Sinnott; referred to the Committee on Public Lands. The bill authorizes the Secretary of the Interior to grant extensions of time under oil and gas permits, and for other purposes. If the Secretary finds that any oil or gas permittee has been unable, with the exercise of diligence, to begin drilling operations or to drill wells of the depth and within the time prescribed by section 13 of the Act of Congress approved February 25, 1920, he may extend the time for beginning such drilling or completing it, to the amount specified in the act for such time, not exceeding three years, and upon such conditions as he may prescribe. Under Senate 2453 Mr. Myers introduced a bill pertaining to this same subject, which reads identically the same as the one above reviewed.

H. R. 8730. Introduced by Mr. Bland; referred to the Committee on Rivers and Harbors. This bill makes it unlawful to discharge oil or other refuse into navigable waters. It is similar to other bills heretofore introduced on the same subject.

INDIAN RESERVATION

S. 2312. This bill, which was introduced by Mr. Walsh and referred to the Committee on Indian Affairs, was reviewed in our September issue. It has been reported from that Committee with an amendment, and the bill now reads as follows: That lands reserved for school and agency purposes and all other unallotted lands on the Fort Peck and Blackfeet Indian Reservations, in the State of Montana, reserved from allotment or other disposition, may be leased for mining purposes under regulations prescribed by the Secretary of the Interior.

ALASKAN AFFAIRS

H. R. 8442. Introduced by Mr. Curry of California; referred to the Committee on Territories. The bill appropriates $4,000,000 to complete the construction of the railroad between Seward and Fairbanks, Alaska. Reported to the House by the Committee on October 14.

LAND OFFICE

S. 71. Introduced by Mr. Sinnott. This bill provides for the consolidation of the offices of register and receiver in district land offices in certain cases. It has been passed by the Senate, August 10; and reported to the House on October 17, by the Committee on Public Lands.

INTERSTATE COMMERCE

H. R. 8689. Introduced by Mr. Jefferis; referred to the Committee on Interstate and Foreign Commerce. This bill amends paragraph 3 of section 6 of the Interstate Commerce Act by adding the following: Provided further, that from and after the passage of this act, any railroad or railroad carriers of freight for hire, on its own initiative, and upon its own line or lines, between stations thereon, or by joint freight-rate agreements with connecting railroad carriers of freight for hire, to stations upon such connecting carrier line or lines, may promulgate, file, put into effect and charge for the transportation of hay, grain, potatoes, live stock, fruits, vegetables, eggs, milk, cream and other perishable food products, coal, and building materials, a lesser rate or rates than the rate or rates theretofore fixed and determined by the Interstate Commerce Commission for the transportation of such commodities: Provided further, that such rate or rates so initiated shall be effective immediately upon the filing of such promulgated rate or rates with the Interstate Commerce Commission, state railway commission, or other public utility commission, or either of them, having jurisdiction of such rate or rates, and such rate or rates shall not be increased during the period of time stated in such rates so promulgated and filed: and provided further, that the Interstate Commerce Commission shall have no jurisdiction or power to fix and determine a minimum rate on any said commodities.

STABILIZATION OF RATE OF EXCHANGE

H. R. 8404. Introduced by Mr. McFadden; referred to the Committee on Banking and Currency. The bill authorizes the President of the United States to extend an invitation to Great Britain and France to send three representatives to meet in conference with three representatives of the United States, to be appointed by the President. The conference is to convene in the District of Columbia not later than three months from the date of issue of invitations and is authorized to conduct a detailed investigation of the international exchange problem and the means which may best be employed for the stabilization of exchange. The bill appropriates the sum of $100,000 for the necessary expense in connection with the conference.

ANNUAL ASSESSMENT

H. R. 4813. Introduced by Mr. Hayden. This bill changes the period for doing annual assessment work on unpatented mineral claims from the calendar year to the fiscal year beginning July 1 each year. It provides that the period within which the work required to be done annually on all unpatented mineral claims located since May 10, 1872, including such claims in the Territory of Alaska, shall commence at 12 o'clock meridian on the first day of July succeeding the date of location of such claim and that the annual period ending December 31, 1921, shall continue to 12 o'clock meridian July 1, 1922.

On August 24, 1921, this bill became a law and is known as Public Law No. 64.

NEW GAS DETERMINATION SYSTEM

A NEW SYSTEM of determining the presence of oxides of nitrogen, a noxious gas resulting from explosions, has been evolved by the Bureau of Mines and a report prepared on the subject. An accuracy of five or six parts per millions is achieved by this method in determining the presence of extremely small quantities of oxides of nitrogen as nitrate, detection having been accomplished of ten parts in one million parts of air.

This type of analysis and use of the newly discovered operation is important in that it will aid in minimizing the quantities of this injurious gas present in the air as a result of improperly fired shots in metal mines. To determine these small quantities, a method was adapted from the usual procedure for the determination of the oxides of nitrogen in water analysis, applying the de-phenyl sulphonic acid method to give the total oxides of nitrogen as nitrogen peroxide or as nitrates.

NEW USES FOR SLATE WASTE

NUMEROUS new uses for slate waste of the mining and quarrying industries have been discovered through investigations carried on by the Bureau of Mines in co-operation with manufacturers.

Chief among the new methods of utilization will be the initiation of "slate flour" as a competing element in a wide field now monopolized by talc, clays, pulverized marble or limestone, ground barytes, aluminum flake and other materials now being extensively used for fillers. It is stated that, with finer grinding than is now being done, waste slate may prove a satisfactory filler in the making of automobile tires, phonograph records and other products which require an extremely fine-grained filler.

MINERAL WITHDRAWALS.—The Land Office has issued special instructions to local land offices in regard to mineral withdrawals. They are based on a decision of the U. S. Supreme Court on March 28 last in the case of Wyoming v. the U. S. in which the court held that conditions obtaining at the date of the completed school land indemnity selection, with respect to the character of the land, whether known or believed to be mineral, were controlling and that the Land Department was without authority to cancel the selection on the ground that the selected land was subsequently included in a petroleum withdrawal proven to be mineral laud.

OIL SHALE BIBLIOGRAPHY

A "Selected bibliography on oil shale" has just been issued by the Bureau of Mines. The bibliography, which is designated as Serial 2277, refers to about 300 articles, papers, reports and treatises bearing on the technology of oil shale, and selected chiefly from the literature of the years 1915–1920.

INCREASED DEVELOPMENT OF WATER POWER PREDICTED

GRADUAL REPLACEMENT of steam power by water power will create, in company with other related conditions, an activity in water power development in the near future that may reasonably be expected to exceed all previous records. This is the statement of Secretary of War Weeks, made in connection with his review of the work of the Federal Power Commission, of which he is chairman.

Up to October 8, 1921, there were filed with the Commission 256 applications involving over 16,000,000 horse-power. The reports of the Census Bureau for 1917 showed an aggregate of only 259 public utility stations in excess of 1,000 horse-power capacity.

Commenting upon the enormous amount of prospective developments represented by applications before the Commission, Secretary Weeks says the country could not, of course, absorb all the power which would be generated if all these applications resulted in completed projects.

He expresses the belief that, however, the greater part of the horse-power involved will be developed, although there will doubtless be many applications for plants that will never be constructed.

SURVEY REVIEWS IRON INDUSTRY

THE iron industry was far more active in 1920 than in 1919, prices were higher, and the volume of business transacted was much greater, but conditions were nevertheless not generally satisfactory, according to a statistical review by the Geological Survey.

The iron ore mined in the United States in 1920 amounted to 67,604,465 gross tons, an increase of 11 percent over that mined in 1919. The shipments from the mines in 1920 were 69,281,341 gross tons, valued at $285,006,327, which show increases of 23 percent in shipments and 44 percent in value. The average value per ton at the mines in 1920 was $4.11, as against $3.50 in 1919. The stocks of iron ore, mainly in Minnesota and Michigan, amounted to 11,378,794 gross tons, as compared with 13,097,500 tons in 1919. These figures include only ore containing less than 5 percent of manganese.

NEW COKING PROCESS

COALS which heretofore have not been thought to possess coking properties may be given additional values as the result of low-temperature process experiments recently made by investigators at the University of Illinois, working in co-operation with the Bureau of Mines. These experiments have developed a method of obtaining a good grade of coke from these coals, despite the fact that present standards would lead to the belief that they would not yield to coking.

Treatment by the methods devised by Prof. S. W Parr of the University of Illinois resulted in a yield of good coke amounting to approximately 60 percent of the coal employed. The coke is dense and of good texture, and seems adapted to use as a domestic fuel and for metallurgical purposes. In some respects the coke seems superior to anthracite for use in domestic furnaces.

The results of the investigation are of twofold importance, indicating the possibility of coking many coals not generally considered to have coking qualities, and also constituting a factor in the solution of the smoke problem in communities not favorably situated for the obtaining of smokeless fuel.

HEROIZED BY FRIENDS WHO SAY HE STOPPED MINE EXPLOSIONS

THE FIRM CONVICTION that a shriveled, little old man is responsible for the decrease in number of mine explosions pervades the thoughts of the entire population of a small Tennessee town. This man is being heroized by his fellow townsmen who believe that he has saved numberless lives as the result of the birth of his brain—a "patent" to prevent mine catastrophes.

Due to the "inventor's" reticence, it has remained for one of his friends to address "Uncle Sam," asking that a fund of some sort be presented to the old man in payment for the explosion prevention plan which he says was presented to the government one year ago.

"A few years ago," writes this friend of the old man, "Jim told me he could stop the explosions in coal mines and would do so if he was able to get a patent on his plan. I told him to get it. He said he would but found that he was without any money to carry things on.

"Well, there were so many explosions he said he would give it to the Bureau of Mines and I think he did and I don't see any accounts of any more explosions and he is the proudest man you ever saw.

"I believe—and he told me—it was the result of his information to the Bureau of Mines. He has got so he can't hear anything and can't do any work on that account."

The writer then makes it plain that the old man "don't expect anything and ain't asking anything and don't know I'm writing to you," making an appeal that is really eloquent in its sincerity.

The concluding paragraph of the letter carries these words: "If he could go on a farm and make a living where he would not have to hear and get a job to hisself as a result of the money that might be gotten up for him because of the explosions he has saved it would be fine, and so I close with best wishes for him and all the rest."

PETROLEUM MEETING—.The annual meeting of the American Petroleum Institute will be held in Chicago, at the Congress Hotel, December 6, 7; and 8. This announcement made by the Institute's Board of Directors indicates a cancellation of the earlier tentative plans to hold the meeting in Kansas City.

UTAH CHAPTER DISCUSSES MINING PROBLEMS

By A. G. Mackenzie

THE UTAH METAL MINE Operators' Institute held under the joint auspices of the Utah Chapter, American Mining Congress and the State Industrial Commission October 7th and 8th, was pronounced an unqualified success, both in point of attendance and interest and in the character of the papers presented.

The meeting was called to order by C. E. Allen, Manager of the United States Smelting, Refining and Mining Company who, after a short address, introduced Governor Charles R. Mabey of Utah who assured the mine operators of his earnest desire to assist the industry in every way possible.

W. Mont Ferry, Managing Director of the Silver King Coalition Mines Company, was unanimously elected permanent chairman of the Institute and Byron Spry of Salt Lake City was unanimously elected secretary. Papers were presented as follows:

"A Discussion of the Requirements of Hoist Signaling in Metal Mines," by Leonard Wilson, Consulting Electrical Engineer.

Discussion led by T. P. Billings, O. N. Friendly and W. H. Cole.

"Improved Methods of Stoping Adaptable to Utah Mines."

Sectional Square-set Stopes,—by A. S. Winther, General Superintendent Utah Consolidated Mining Co.;

The Mitchell System,—by J. B. Haffner, Foreman Tintic Standard Mining Co.;

Top Slicing,—by A. P. Mayberry, Former Superintendent Centennial Eureka Mine;

Discussion led by Joseph Hyland, R. E. Phelan and J. A. Norden.

"Field for the Storage Battery Locomotive in the Mines of this State,"—by E A. Hamilton, Superintendent U. S. Mines.

Discussion led by L. R. Dobbs and H. T. Plumb.

"Efforts of the American Mining Congress in Standardizing Mining Machinery and Methods,"—by H. C. Goodrich, Chief Engineer, Utah Copper Company.

Discussion led by E. H. Burdick.

"Our Experience in Overcoming Hot Mine Gases, Including Guniting Drifts,"—by A. J. May, Superintendent, Tintic Standard Mining Company.

Discussion led by Lewis Merriman and A. C. Nebeker.

"The Present Status of the Wet Stoping Drill,"—by H. G. Snyder, Metal Mine Inspector.

Discussion led by William Owens and H. M. Hartmann.

"Should the Metal Mine Operators of Utah Conduct Future Meetings of this Character,"—by L. S. Cates, Assistant General Manager, Utah Copper Company.

Discussion led by E. F. Birch, A. G. Mackenzie, D. D. Muir and J. Fred Johnson.

PROPOSED CONSOLIDATION OF ROADS OUTLINED IN PRELIMINARY REPORT

By C. H. Farrell

THE TRANSPORTATION ACT provides that the Interstate Commerce Commission shall prepare and adopt a plan for the consolidation of the railway properties of the continental United States into a limited number of systems, bearing in mind the preservation of competition and existing routes and channels of trade and commerce. The law also requires the Commission to give due consideration to the cost of transportation, to the necessity of retaining uniform rates, and to the desirability of providing traffic which will net substantially the same rate of return upon the value of the respective properties.

In accordance with this provision of the law the Commission assigned Professor Wm. Z. Ripley, of Harvard University, to prepare a report, and the Commission has taken this report and drawn up from it a tentative plan upon which it hopes to establish a record through a series of hearings and investigations which will make possible the result suggested by the law. The plan which the Commission proposes will divide all the carriers in the United States into nineteen principal systems, which will be known as follows:

System No. 1—New York Central.
System No. 2—Pennsylvania.
System No. 3—Baltimore & Ohio.
System No. 4—Erie.
System No. 5—Nickel Plate-Lehigh Valley.
System No. 6—Pere Marquette.
System No. 7—New England.
System No. 8—Chesapeake & Ohio.
System No. 9—Norfolk & Western.
System No. 10—Southern.
System No. 11—Atlantic Coast Line-Louisville & Nashville.
System No. 12—Illinois Central-Seaboard.
System No. 13—Union Pacific-North Western.
System No. 14—Burlington-Northern Pacific.
System No. 15—Milwaukee-Great Northern.
System No. 16—Santa Fe.
System No. 17—Southern Pacific-Rock Island.
System No. 18—Frisco-Katy Cotton Belt.
System No. 19—Chicago-Missouri Pacific.

This report is intended only as a basis for discussion and it is understood that the Commission will assign a series of hearings in the near future at which everyone concerned can criticise the present plan and make such suggestions as he desires, the hope being that in the end a working plan can be adopted. The report as now made up includes principally the Class I carriers. Those controlled by Canadian roads are not included because they form parts of systems in competition with the new systems suggested. Neither are the majority of the small industrial, terminal and interurban electric companies given a position, but it is understood that they will be included after they have been discussed in the various hearings. Water carriers are also excluded for the present and are considered as tentatively in the systems in which the rail carrier controlling them has been included.

THE MINERS' CONTRIBUTION.—Figures indicating the great extent to which products of mines contribute to the running of our railroads are again available, this time for the second quarter of 1921 The Interstate Commerce Commission shows that products of mines are responsible for 2,525,313 carloads of revenue freight originated on the lines of the various carriers out of a total of 6,298,698 cars. Translated into tons the figures are 124,145,374 out of a total of 222,-575,624. In other words, products of mines furnished about 40 percent of the total number of cars originated by the carriers and about 56 percent of the total number of tons originated by the carriers. Under the classification of products of mines the Commission, however, does not include refined petroleum and products, pig and bloom iron, rails and fastenings, bar and sheet iron, structural iron and iron pipe, casting machinery and boilers, and other metals, pig, bar and sheet, which would increase the number of cars shown above by 445,216 and the number of tons by 13,085,489, and would increase the percentage of the whole number of cars originated by mines to about 47 percent and the whole number of tons originated by mines to about 62 percent. Taking the total number of tons of revenue freight carried we find products of mines are credited with about 52 percent, while the tonnage of the articles named above which are not included in products of mines added to the tonnage that is included in products of mines gives the mining industry credit for about 59 percent of all the tons of revenue freight carried by the railroads.

REDUCTIONS IN RATES.—The Association of Railway Executives, in denying that it had refused any proposition of the public group of the Labor Board, called attention to the rate reductions which have been made since the general increase in rates effective about September 1, 1920. Below is given a summary of the general reductions which the Executives claim:

Cargo coal from points in Ohio, Western Pennsylvania and West Virginia, to Lake Erie ports with an estimated loss in revenue of $4,116,000;

Grain and grain products, ranging from $1.40 to $2.10 per ton, and including new export rates from Chicago to the Atlantic Seaboard which are actually lower than the rates in effect prior to the general increase;

Road making material in New England, New Jersey, Pennsylvania, West Virginia, Indiana, Maryland and Delaware, which involves reduced revenue on many millions of tons;

Export iron and steel articles, averaging $1.66 per ton;

Imported iron ore, averaging 58.8 cents per ton;

Ex-lake ore, amounting to 36.5 cents per ton.

The Pennsylvania Railroad East of Pittsburg is said to have made 3,871,286 rate reductions, affecting 2,988 origins and 34,561 destinations. In Central Freight Association territory rates affecting 662 commodities have been reduced, covering about 4,500 points of origin and 10,000 destinations. The Executives insist that a similar situation has prevailed throughout the country and that some railroads have made reductions in rates which amount to more than the reductions in wages so far effected. On many other roads the reductions in wages made it possible for the carriers to operate without a deficit, but left them no net return. The Executives conclude with a statement that any subsequent reductions in wages will be passed on to the shipper if the Interstate Commerce Commission approves.

WAGES.—In connection with the strike news that is getting so much prominence at the present writing some figures recently made public by the railroads are of interest. The statistics of the Interstate Commerce Commission during the second quarter of this year show that the average annual compensation per railroad employe was 126 percent greater than it was in 1913, while tabulations of the National Industrial Conference Board show that the cost of living in June, the last month of this quarter, was 61.9 percent greater than in 1913. During the year 1920 the average hourly earnings per railroad employe was 67.7 cents, or 172 percent more than in 1913, while the average for the first quarter in 1921 was 72.2 cents, or 190 percent greater than in 1913, and for the second quarter 71 cents, or 185 percent greater. The average ate of wages per hour in 1920 in other thai ailroad employment was only 99 percent greater than in 1913. During the first months of 1921 the total wage bill of the railroads was $1,457,010,151, or 54.44 percent of their gross operating revenues. The carriers estimate that their wage bill in 1921 for the full year will be $2,914,000,000, or $1,175,000,000 more than the total wages paid in 1917.

EARNINGS.—During the month of August the carriers had a net operating income of $90,200,000 compared with a deficit in August of last year of $158,539,000. The operating revenues decreased 8.9 percent but there was also a reduction in operating expenses of 43.9 percent, and this large saving in expenses coupled with decreased expenditures for maintenance are given as the reasons for the largest operating income yet shown this year. The Executives explain that only $182,000,000 was spent for maintenance in August of this year, which is a reduction of 45.3 percent compared with August last year. Had a similar amount been spent this August there would have been an operating deficit of $60,800,000. There is, however, no explanation of whether August of last year was an extraordinary month from the standpoint of maintenance. Taking the earnings by districts and comparing with August last year we find that the Eastern district showed a reduction of 11.7 percent in operating revenues, a reduction of 44.1 percent in operating expenses, and a net operating income of $32,244,000 compared with a deficit last year of $78,398,000. In the Southern district operating revenues decreased 14.1 percent, operating expenses 35.6 percent, while there was a net operating income of $7,461,000 compared with a deficit last year of $13,175,000. In the western district operating revenues decreased 3.7 percent, operating expenses 46.6 percent, leaving a net operating income of $50,495,000 compared with last year's deficit of $66,966,000. The operating income for the first eight months of this year on all roads has been at an annual rate of return of 2.6 percent upon the money invested in the railroad properties as fixed by the Commission.

CAR LOADING.—Beginning with the week ended September 3rd, which was an increase over the previous week, we find that the carriers are steadily gaining in the number of cars loaded with revenue freight, each week during the month of September and up to October 1st showing an increase except the week ended September 10th, which showed a decrease on account of the observance of Labor Day. However, this week would undoubtedly have shown an increase over the previous one because the average daily loadings during the six working days showed an increased tonnage. The following week, which ended on September 17th, showed a loading of 853,762 cars, which was the largest number loaded during any one week since December of last year. The following week, which ended on September 24th, showed an increase over the previous record week of 19,543 cars and the week ended on October 1st showed a still further increase of 27,773 cars, all of which indicates that tonnage on the roads is steadily gaining in spite of the business depression and the high scale of rates, or else that business is gradually picking up and that the rate reductions already in effect are beginning to result in increased tonnage.

CAR SUPPLY.—The number of freight cars idle because of business conditions on October 1st totaled 375,370 as compared with 414,698 on September 23rd. This was a reduction of 39,328 under the previous week and followed reductions under each week during the month of September. Of the total number of cars idle on October 1st 172,420 were in good condition and ready for service, while 202,950 were in need of repairs. Surplus box cars in good order totaled 42,093, and there were 98,048 idle coal cars in good condition ready for service. On October 1st there was 15.8 percent of all freight cars in need of repairs, compared with 16.3 percent on September 15th. Ordinarily about 7 percent of the total number of cars is idle, and by using this figure we reach the conclusion that 202,950 cars are idle and out of repair more than during normal conditions.

INDUSTRIAL NOTES

E. E. Aldous has been appointed as representative in St. Paul, Minneapolis - Duluth territory, with headquarters at St. Paul, by the American Steel & Wire Company of Chicago. Mr Aldous has been connected with the company for twenty years in different positions and, therefore, is well posted in their various lines and eminently qualified to represent them and take care of their interests.

The Jeffrey Manufacturing Company of Columbus, Ohio, in order to render greater service to users of their mining machinery in and around Fairmont, West Virginia, have established a service station in the Fairmont Hotel Building, where a complete line of standard parts for their mining machines and locomotives will be carried in stock for the convenience of customers in ordering supplies.

Homer W. Scott is now in charge of the Cleveland office of the Jeffrey Manufacturing Company, located at 437 Leader News Building, and C. R. Heller is now in charge of the Buffalo office located at 1108 Marine Trust Building. Both of these gentlemen have had a thorough training in the Sales and Engineering Departments of the Jeffrey Company.

Through an error the cuts in the October advertisement of the W. M. Lalor Company were run up-side down. Corrected ad appears in this issue.

The Automatic Reclosing Circuit Breaker Company of Columbus, Ohio, has developed and placed on the market what is designated as the Type "SS" Automatic D. C. Motor Starter. This starter is designed for 250 or 500 volt service in capacities of 3, 5, 7½, and 10 H. P. It is of the counter e.m.f. type with one step of resistance which is automatically cut out when the motor comes up to speed. This resistance is made of nickel and chromium alloy wire, the very highest grade material available for withstanding corrosion, and is of such value that it limits the starting current to the full load current of the motor and of sufficient capacity to carry this full load current indefinitely.

Leonard W. Kearns, one of the prominent men in the leather belting industry, has affiliated himself with the sales organization of the Chicago Belting Company of Chicago. As a salesman he has had marked success and his friends will be interested in knowing that his new activities will cover a broader field than ever before.

Roberts and Schaefer Company of Chicago, Illinois, have just issued a new Coal Mining Plant Book, No. 45. It is a publication of 63 pages 8″ x 11″, and is fully illustrated with diagrammatic drawings of the mechanical equipment and photographs of the machinery and completed structures which they have designed and built.

Mr. Fritz R. Lindh, formerly chief engineer of the Graton and Knight Mfg. Company, has joined the sales organization of the Chicago Belting Company.

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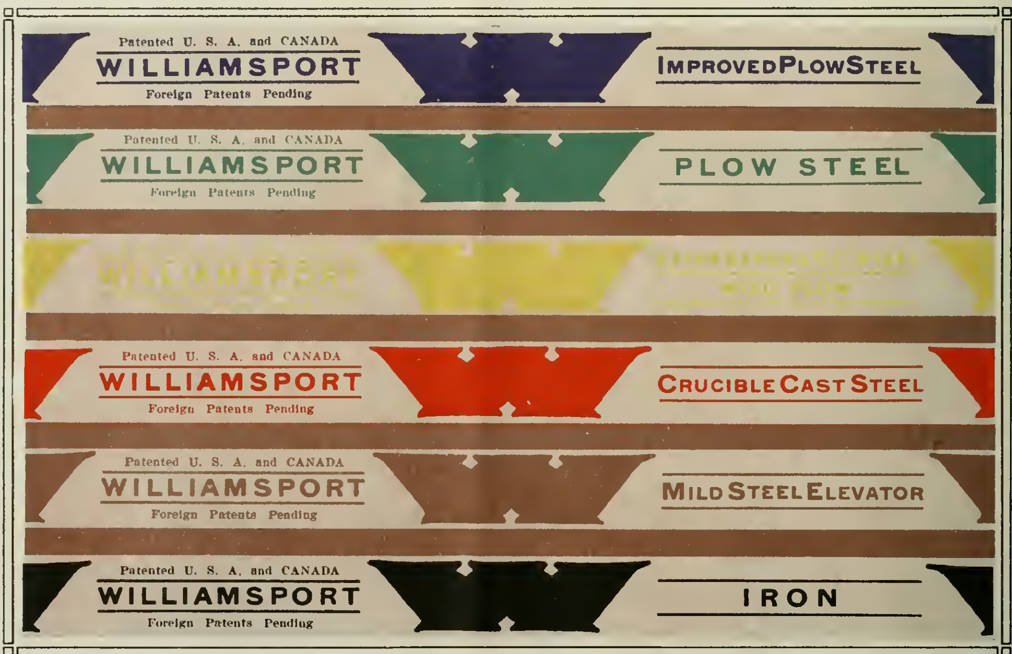

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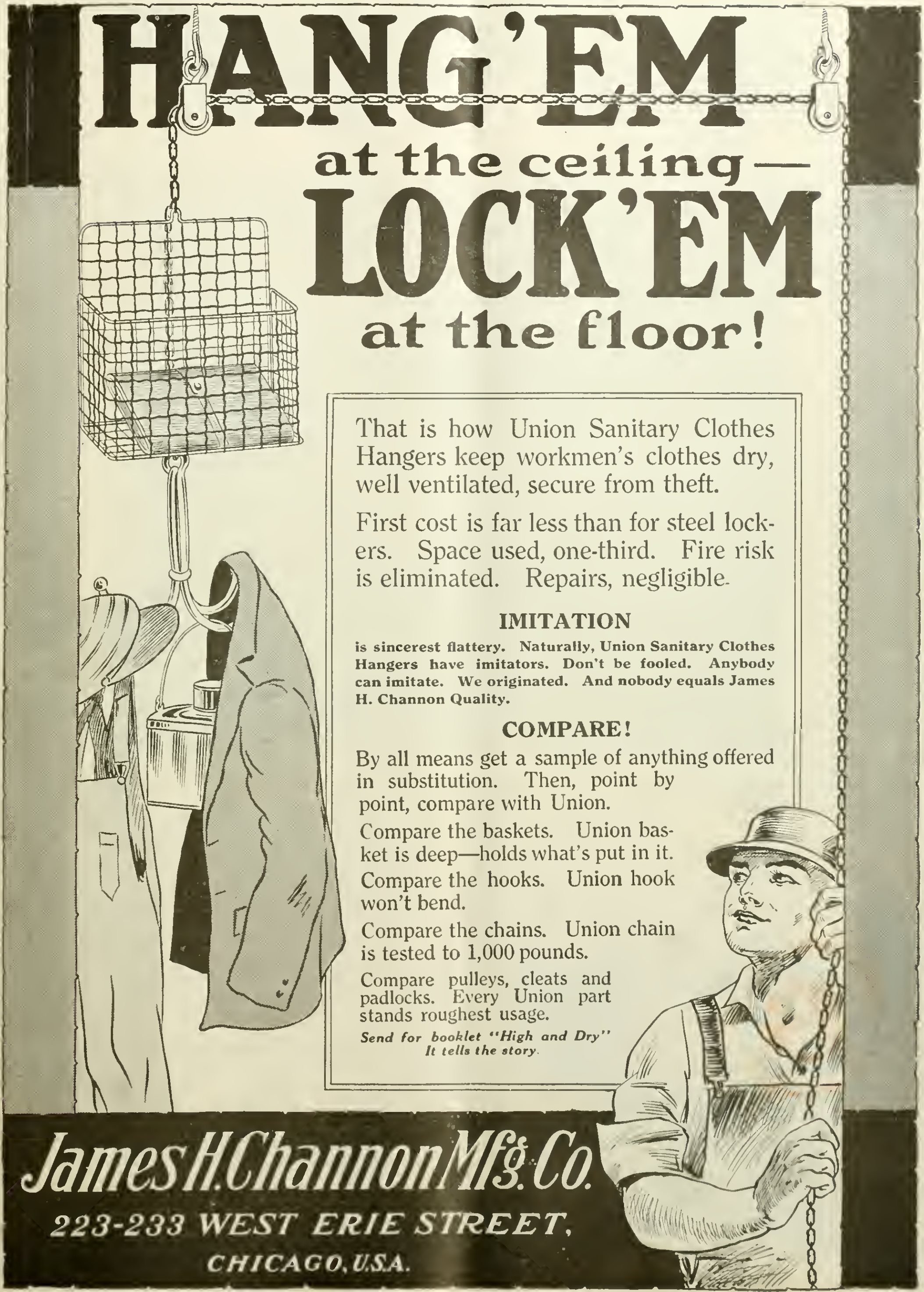
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"PEACE WITHOUT VICTORY"

AMONG the many intricate and difficult questions now under discussion by the Disarmament Conference none present greater difficulties than that outlined by M. Briand in his appealing address in which he set forth the reasons why France cannot meet the apparent requirement of the situation by a large reduction in her military forces. At no time since the armistice was declared has the cruel iniquity of that damning phrase "Peace without victory" been so clearly manifest. France desires peace, as does all of the allied world. France had seen the preparation for conquest of its German neighbor since 1872 in which every agency had been made to yield itself to the growth of military power. Not only intensive burdens upon her people, but even the degradation of her women were made to serve this one great aim to make herself the military dictator of the world. And then, at a time when the Nobel PeacePrize was about to be awarded to Kaiser Wilhelm, without warning or excuse, the storm of wrath was unloosed, and all international obligations were ruthlessly violated. Temporary success so swelled her bloated brutality that the United States was at last forced into the carnage. When it became apparent to Germany that the destructive power of the United States was rising en masse to crush its aspiration; when the Kaiser was brought face to face with that condition which he described as, "America gone war mad," the German war machine hid itself behind an armistice made possible by a silly sentimentalism. Peace was made months too soon and before Germany was defeated, thus saving her from the ruination which she had wrought upon her neighbors and leaving her in the position as described by M. Briand of having 100,000 trained officers upon her police force, with 6,000,000 trained men available for quick service, and her industrial plants undisturbed and in working condition through which war supplies may be quickly supplied for this vast army standing over the line with its unavenged grudges strong and controlling.

That a grave war in which millions of lives were lost and half the world's available wealth extinguished should be terminated without vindication is the greatest blunder in all history—"Peace without victory." The world's peace looks now upon a Germany with the ability to quickly place itself upon a war footing with her unavenged grudges intensified by her failure to crush the world and her enduring and continuing resolve to some time accomplish her hellish purpose. It is difficult to see how France can do other than follow the course mapped out by M. Briand in his matchless address to which the heart of America will respond without limit.

THE DUTY AND OPPORTUNITY OF AMERICA

THE POSSESSION of wealth always carries with it a burden of responsibility. The possession of the world's recognized tool of wealth—gold—entails a responsibility for so using that tool as to serve the world's commercial necessities. Today the United States possesses vastly more than its share of the world's gold. It stands in the unique position of not only controling the large part of the world's gold but the additional advantage of having other nations obligated to pay to it in gold a sum vastly in excess of the total amount of gold in the world.

This condition brings to us a surplus of gold while those other nations, whose prosperity is vastly important if not necessary to our own welfare, are unable to do business because of the entire breaking down of credit. The United States, if it shall act with collective intelligence is in position to set world's industries in motion and in turn to revive our own industrial activity. This fact is recognized by the best thinkers in the United States as well as those abroad.

The London Times in a recent issue editorially declares that:

> "Unless the United States shoulders the burden of world finances only a miracle can divert the financial destruction which is ever drawing nearer," * * * "America alone can stabilize credit by devising some scheme for financing the nations now hovering on the brink of insolvency," * * * "In such an event the United States will suffer incalculable losses. The only way out is for America to observe the precedent set by the Bank of England when it saved American credit in a minor crisis by drawing gold from all the world to loan where it was most needed. America holds the world's gold today. The time is short, for, should Germany fail to pay, France may march into the Ruhr region and then who can say what disarmament proposals may not vanish in the smoke of war."

It is not only the duty of the United States but its great opportunity to develop some plan by which European credits may be reinstated to the extent justified by wealth and productive capacity. Where is the statesman who will present the plan which will command the approval of the American people and which can quickly furnish to the industries of Europe the tools which will make possible effective operation?

GETTING CLOSER TOGETHER

THREE FACTS are of tremendous importance to all mining men:

(1) It is asserted that the western states hold the largest coal deposits in the world.

(2) It is practically conceded that the western states have the richest oil fields in the world.

(3) Oil men and coal men from the eastern and central states and coal, oil and metal mining operators met at the Chicago convention of the American Mining Congress and manifested an unwonted interest in each other's welfare.

It was not always thus. Gold, silver and copper producers who concerned themselves but little with affairs east of the Mississippi were not unknown in former years, while coal producers rarely thought of offering assistance to or expecting co-operation from anybody from the Rocky Mountains or the deserts or the plains. The minerals produced in the different sections were so entirely unlike that operators from the east and the west proceeded on the basis that they had nothing in common and at times even permitted the impression to grow that their interests were naturally conflicting. Those who clung to this view accomplished nothing for the mining industry as a whole and very little for themselves.

But all of this has changed. The last decade has seen all branches of the mining industry come closer and closer together. Concerted action has brought benefits in proportion to the added strength which unity of purpose always gives. Witness the depletion, discovery and invested capital clauses, which save the mine owners hundreds of millions of dollars yearly; the establishment of the Bureau of Mines, with consequent improvement in mining methods and lessening of the risk hazard for workmen; the enactment of legislation reimbursing producers for war losses sustained at the behest of the government; the ever-growing recognition accorded the industry by the government, the press and the public until now the establishment of a Department of Mines is almost a certainty. Still greater achievements were forecasted at Chicago, where the solidarity of the mining industry was demonstrated more clearly and forcefully than ever before. At Chicago, coal operators frankly asked for the help of the metal miners, and western operators freely expressed their gratification at the interest taken in their problems by, and the proffers of assistance from, those who came from the Lakes region, the seaboard and the Gulf. These tenders were accepted, and even now men representing all branches of mining from all parts of the country are working together in an effort to solve some of the knottiest problems with which they and the nation are confronted.

The west is now a coal country, an oil producing country. The last sectional phase of mining has disappeared; the one-ness of the industry is accomplished beyond dispute. Just as the cotton planters, the wheat raisers, the corn growers, the truck gardeners and the chicken breeders are all farmers, so the metal men, the coal, oil and non-metals producers of all the states and territories are all miners, and their interests are mutual. They are standing together, planning together and acting together today for the protection of those interests, and the most encouraging sign of the times is that they will continue to do so.

AN INDUSTRIAL REQUIREMENT

BUSINESS CONDITIONS are gradually improving. A stable business will adjust itself to any conditions. Low prices will be raised to the higher levels, or high prices adjusted to the lower levels, as the circumstances require, but low prices for labor and high prices for commodities cannot prevail at the same time without privation to wage earners. In many lines wages have been reduced below the corresponding decrease in commodity prices and thus an undue burden comes upon him who has accepted the lower wage scale. Upon the other hand, the partial lowering of the commodity prices gives an undue advantage to that wage earner who, through those forces which temporarily set aside the law of supply and demand, has been able to maintain the wage scale established during the high priced period of the war. Unless downward adjustments be made in two lines of employment it will become necessary as a matter of justice to raise other levels to that standard. The coal miners and the railroad employes are holding to a wage level above the average price level. On account of the high levels in the costs of transportation and power an undue burden is put upon industry and an unbearable burden upon those who either have accepted wage cuts or who are without employment because the cost of power and transportation prohibit the operation of the industry which furnishes employment. There would seem to be a public necessity for reduction in both of these wage scales to that point which is justified by the present commodity price levels as compared with pre-war wage conditions. Either these adjustments must come, or other price levels must be brought up to somewhere near that standard. The $2 a day man cannot buy the product of the $10 a day man and the business which can pay $2 in wages cannot afford to operate if forced to pay a higher wage scale except it is producing some necessity so great that the public must pay for it no matter what it costs. The law of supply and demand will eventually reach this situation. Is it not wise that labor unions shall apply the doctrine of reason to wage adjustments rather than the doctrine of force as manifested in the strike?

WHERE MINE TAXATION DIFFERS

EVERY PROPOSAL for taxation of mining properties should be based upon a thorough knowledge of the risk which attends mining investments and the short life of most mining properties. In these respects mining is different from any other business in the world, and to this extent it must always be given separate consideration.

Not every bona fide investment returns a profit. It is not an unheard of thing for many thousands of dollars to be expended under the most scientific and business-like direction without the extraction of a ton of ore. Senator Reed Smoot recently stated his belief that if the cost of discovery of all the precious metals mined in the United States were computed it would be found that the outlay amounted to two dollars for every one-dollar's worth of ore taken from the ground, and that among mines which do produce ore, those which are operated profitably for a period of ten years are considered better than ordinary. Such a mine costing one-million dollars could produce ore valued at one hundred thousand dollars above operating expenses each year for ten years and still be a losing proposition. The owners would be receiving only the year's pro rata portion of their original capital, with no interest whatever on the investment.

Allowance is made for this phase of the situation in the depletion clauses of federal tax enactments, but in many of the states no recognition whatever is given thereto. This is true particularly in those states where the mining operators are not organized, or where they fail to work in co-operation with their national organization. The Tax Division of the national organization recognizes the necessity of bringing about as far as possible a uniformity of methods and administration of tax laws in the various states, and pursuant to the will of the industry as expressed at the Chicago convention is gathering information which will be of interest not only to state legislatures, but also to many operators. This information, together with the assistance of the Division, is at all times available to the industry.

OPEN PRICE ASSOCIATION WORK

CONCERNING the right to be informed as to stocks, supplies and market prices involved in the so-called Hardwood Lumber case, which is now awaiting decision by the Supreme Court of the United States upon an appeal from the decision of the United States District Court for the Western District of Tennessee, forbidding associations to give out information to their members and to the public concerning definite accomplished facts, we call especial attention to the resolution adopted by the Chicago convention asking for the creation of conditions which will permit business men to know the actual conditions in the markets through which their goods are to be disposed of.

Should the Supreme Court reverse the decision of the lower court in the Hardwood case the question will be thus solved. In case the lower court's conclusions are upheld by the Supreme Court, then there seems to be a real necessity for legislation which will permit business men to be advised of the existing facts which relate to their operations.

THE QUALITY OF EXPORT COAL

REPORTS to the Commerce Department emphasize the need of giving attention to a matter upon which the development of our export coal trade depends, that is, to the quality of the coal exported. It is known that some of the operators have given thought to grading and classification, and that they believe along with Secretary of Commerce Hoover that the time for taking definite action has arrived.

According to Commerce Department reports, American exporters have lost their supremacy in the Swedish markets through repeated deliveries of coal inferior to the samples upon which the sales were made. Whether breakage and pulverization was caused in transportation, or whether inferior grades were shipped by irresponsible in-and-outers whose intention was only to ship during a peak market, the effect has been the same, namely, considerable adverse publicity and a curtailment in the volume of orders for American coal.

Various means have been suggested for removing the cause of complaint. One is that the right of inspection before payment be granted; another, that reliable agents of American firms be appointed for the express purpose of regaining the confidence of their foreign customers which has been lost. Another is that the exporting concerns agree upon methods of grading and maintain a joint inspection bureau with authority to issue certificates of guarantee. The latter method is similar to the system followed by the grain exporters. It is not the purpose of this article to say what method should be adopted, but rather to call attention to the fact that the Department of Commerce has thrown out broad hints that unless the exporters themselves adopt a set of rules and regulations governing export shipments the government is liable to step in and do it for them. Of all things conceivable, this would be the most undesirable, for if there is anything the coal industry does not want, and does not need, it is more government regulation.

At the recent conference between Secretary Hoover and mining operators, appointment of a committee was authorized, charged with the duty of looking into the ocean freight situation. Operators who oppose further government meddling in their business should, and undoubtedly will, give to the committee the fullest possible measure of support and co-operation.

THE WAY OF THE WEST

NOT THE BIGGEST in point of attendance, but the equal of any in importance and in the amount of attention it attracted, was the Shale Section of the twenty-fourth annual convention of the American Mining Congress in Chicago. And not only the meetings, but the shale exhibits of the United States Bureau of Mines and various western states aroused the interest both of scientists and laymen.

Following adjournment of the convention some newspaper printed an editorial entitled, "Gas," which has since been reproduced in scores of other papers, and which said:

"The use of automobiles is increasing 170 percent a year,while production of crude oil, from which gaosline is made, is increasing only 10 percent a year.

"These figures caused knitted brows at the American Mining Congress in Chicago. They become of interest to you only when you take pencil and paper and try to figure out when gasoline will go to $1 a gallon.

"Probably never, say geologists. Oil wells are giving out. Enough oil, however, lies in western shale rock to supply the world for centuries. Right now it costs too much to extract by distillation. But a way will be found."

It is an exaggeration to say that figures concerning the increased use of automobiles and gasoline caused knitted brows at Chicago. The crux of the article quoted, and the thought which makes it worthy of additional circulation, is contained in the sentence, "Enough oil lies in western shale rock to supply the world for centuries," and in the prediction, "A way will be found." If the shale men who traveled to Chicago had done nothing else than impress these two facts upon the nation at large, they would have more than justified the time and expense of their journey.

To say that enough oil lies in western shale to supply the world for centuries is equivalent to saying that the world will assuredly be supplied, for "a way will be found." The west always finds a way, if there is a way—and if there is no way the west will make one.

LAWS AND LAWS

MODERN DEMOCRACY, in so far as it is exemplified in this United States, seems to have gone mad with legislative hysteria. Whatever else happens, the legislative machinery of the state and federal governments can be counted upon to grind out about 25,000 new bills every year. Members of the various state legislatures and of Congress would be considered derelict in their duty if they failed to introduce new bills and secure the passage of at least a reasonable percentage of those introduced. They accumulate rapidly. Each state adds a few hundred statutes annually to those already on hand. No attempt is made to repeal or modify any that are onerous or obsolete. And Congress, not to be outdone by state legislatures, still holds the lead.

It has been estimated that our forty-eight states and Congress together are responsible for more than 10,000 laws annually, and this must be a conservative estimate. But when they are enacted who of us can obey them all? The legislators who pass them are seldom certain as to their meaning. Courts are disagreed as to their intent and purpose. Lawyers are confused in their interpretation. What chance is there under the circumstances for the average layman? If he violates some law because of the fact that he has been unable to keep track of all the new measures that have been passed to regulate his conduct, he is told that ignorance of the law is no excuse. He is presumed to know the law. It is a miracle how we are protected from one another by multitudinous and intricate statutes, and it is a super-miracle that the average citizen manages to avoid litigation, and, by some hook or crook, keep within the law.

During our impressionable and plastic years we are taught that democracy is peculiarly adapted to the making of laws which will safeguard and promote the interests of the people. We are told that "We, the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquillity, and promote the general welfare," will show great caution in the adoption of new laws that may interfere with our liberties. No less eminent authority than the great Blackstone held such a view concerning democracies. But, as a matter of fact, the contrary has proved to be the case. Either the people themselves or their duly elected representatives in the state legislatures and Congress have shown an unusual willingness in recent years to interfere with the rights and liberties of the people. Not only is this true, but we are confronted with another problem, which is that of combatting the tendency of certain groups, representing only a small fraction of the people, to impose their narrowed policies upon the majority. This tendency has been unusually apparent during the consideration of the new federal revenue law, but pressure is being exerted upon every other measure pending before Congress. In the various states it is disclosed in the policy of controlling political groups to penalize other classes and groups who find themselves defenseless.

It is too easy to make and unmake laws. There is danger that people will lose their respect for the "majesty of the law," and make no pretense of compliance with its complexities. Thus our social fabric may be seriously jeopardized. Agitation for additional laws which seek to regulate every human action from the cradle to the grave should be replaced by a campaign for the re-establishment of the rule of common sense.

HIGH TARIFFS AND HIGH PRICES

A CONSPICUOUS FALLACY is the doctrine that a protective tariff always increases the cost of living. Opponents of protection invariably say that it does, hoping thereby to defeat it, while some of the friends of protection give assent to the assertion but make the point that the public is better able to pay high prices under protection than low prices under free trade. Both are wrong, the former altogether and the latter partly.

High tariffs and high prices do not always go together. The one does not necessarily produce the other. As a matter of fact, a protective tariff on raw materials seldom, if ever, results in sustained increased prices for manufactured products. Its natural effect is to stabilize costs and thereby enable manufacturers to turn out lower priced commodities than would be possible without protection.

In an unprotected market the prices of all commodities are affected by economic conditions the world over, the result being a wide range of fluctuation with prices ranging from unreasonable peaks to distressing lows. Manufacturers confronted with such choatic conditions are driven by self-protection to base their selling prices upon the highest probable cost of their raw materials. In such circumstances the consumer pays top prices.

But a protective tariff, by governing the volume of importation and stimulating the maximum domestic production, insures a steady supply of raw materials for American factories at prices practically stationary the year around. Having fewer and lower apexes to deal with, the manufacturer can with greater certainty compute his costs, and it follows as a natural sequence that his selling prices can inevitably be lower, as it is not necessary to keep the safety margin so wide between material costs and sale price.

If those who oppose protection will take the time and trouble to reason about it they will realize, whether they admit it or not, that protection of American raw materials will stabilize prices, and that the law of supply and demand can be depended upon to keep the stabilized level on a reasonable plane.

THE WEIGHT OF THE INDUSTRY

THE NAIL WAS HIT squarely on the head when Secretary Hoover on November 14 told the conference of operators to get the weight of the whole mining industry behind any recommendations that might be made by the metals, coal and oil committees. The Secretary stated he had asked the American Mining Congress to appoint the conference committee because he felt that this "broad basis" should be given to its work, and the inference was emphatic that one organization could accomplish results many times greater than the sum of the achievements of numerous smaller bodies.

Mr. Hoover is a shrewd man, of great experience and observant to the n'th degree. He can speak of his own knowledge of international affairs in general and of the commercial situation and the mining business in particular. He knows the value of unity in action. It was he who caused America and her allies to handle their food problems, undoubtedly among the most critical the war brought forth, upon the "broad basis" of one strong body representing all, and it was he who demonstrated since the war that only one international relief agency operating upon this same broad basis could save a large part of Europe from starvation. In commending unity of action to the mining industry he is but advising the operators to do what his experience and observation teach is a condition precedent to success.

The Twentieth Century is a period of large organizations, comprehensive planning and big results. Everything is done on a broad basis. Representatives of segregated interests, important as those interests may be to those immediately involved, find themselves sitting in the ante-room while the agent of consolidated movements passes straight into the main office. The man with a complete program, backed by the weight of an industry and built upon the broad basis of consideration for collateral and competitive as well as associated interests, is the only man who can always secure an immediate hearing and respectful consideration.

What basis could be broader than the welfare of the mining industry, extending over three-fourths of the states and territories? What support could be weightier than that of the persons and firms who employ a million and a quarter men, furnish more than half the railway tonnage and pay the largest comparative proportion of state and federal taxes? The mining business and the nation's combined business are so inter-dependent that the curve of prosperity of the one coincides with that of the other. The support of its leaders for any program is a guarantee of that program's righteousness and of its political and economic soundness. Such an influence should not be dissipated by fractional utilization, but, as Secretary Hoover said, maintained on the broad basis of entirety and applied with its whole weight to those problems upon the settlement of which the well-being of the world depends.

OPERATORS' CO-OPERATING COMMITTEE CONFERS WITH HOOVER

PETROLEUM

E. L. Doheny,
Mexican Petroleum Co.

George S. Davidson,
Gulf Refining Co.

A. L. Beaty,
Texas Company.

H. F. Sinclair,
Sinclair Oil Co.

Walter Teagle,
Standard Oil Co. of N. J.

METALS

Bulkeley Wells,
Gold.

F. B. Richards,
Iron.

Edgar Z. Wallower,
Zinc.

B. B. Thayer,
Copper.

J. G. Bradley,
Chairman.

J. F. Callbreath,
Secretary.

COAL

J. G. Bradley,
Elk River Coal & Lumber Co.

T. H. Watkins,
Penn. Coal & Coke Corp'n.

E. W. Parker,
Anthracite Bureau of Information.

Albert Nason,
Nason Coal Co.

J. G. Puterbaugh,
McAlester Fuel Co.

S. D. Warriner,
Lehigh Coal & Navigation Co.

THE ABOVE committee called on Secretary of Commerce Hoover on November 14 in response to a request delivered in his behalf at the Chicago convention of the American Mining Congress. Secretary Hoover in his request had stated:

"It is the keen desire of the Department that it should be brought into closest relationship for co-operation with the industry, and it seeks the appointment of a committee from your Congress which will co-operate with the Department."

There were present during the conference with Secretary Hoover all members of the committee except Messrs. Sinclair, Teagle and Warriner, and, in addition thereto, Dr. E. W. Parker, secretary of the Anthracite Bureau of Information, Philadelphia, who represented Mr. Warriner; J. D. Zook, of the Nakomis Coal Company, Chicago; the heads of all departments of the American Mining Congress, and H. C. Morris, chief of the Fuel Division of the Bureau of Foreign and Domestic Commerce.

Before calling upon Secretary Hoover, the committee held a lengthy conference in the office of the American Mining Congress, at which time J. G. Bradley was elected chairman and Mr. Callbreath, secretary. Chairman Bradley is one of the best known coal operators, and at the present time is president of the National Coal Association, in which organization he has held official responsibilities practically since its inception. At the first conference the question arose as to whether the committee should be prepared to present any definite suggestions to Mr. Hoover, and the decision was reached that inasmuch as the Secretary had requested the appointment of a committee he undoubtedly had some particular subject in mind and the committee should therefore call upon him and offer its assistance and co-operation, but make no suggestion unless he called for suggestions. Accordingly, at the conference with Mr. Hoover, which began at 4 o'clock in the afternoon, Chairman Bradley opened the meeting by telling the Secretary that the committee, representing different phases of the mining industry, had come to offer its services in any capacity and to co-operate in every way.

J. G. BRADLEY

Chairman of the Mining Congress committee, appointed at the request of Secretary Hoover, to co-operate with the Department of Commerce. Mr. Bradley is president of the Elk River Coal & Lumber Company and president of the National Coal Association

Numerous problems confronting the mining industry were discussed, among them being the invasion of American oil fields by foreign capital, restrictions placed upon American investments in foreign countries, the export business as related to both metals and coal, ocean freight rates and the Seaman's Law, the exchange situation, and the general problem of government regulation.

Mr. Hoover spoke mainly upon export problems, particularly coal, emphasizing that American exportations were continually falling off and that the Department of Commerce was greatly exercised about the matter and wanted to be of assistance in bringing about a change. Mr. Bradley stated that the National Coal Association had a committee, of which Mr. Watkins was chairman, which was functioning on behalf of the coal industry in this respect. Mr. Watkins announced that he would have to confer with members of this committee before making definite commitments in behalf of the coal industry.

At the suggestion of Secretary Hoover, the conference committee will consider at once the question of the application of the Seaman's Law. It is believed by Mr. Hoover that the shippers and ship owners can suggest certain changes in the measure which will be acceptable to Congress, in that they will promote export business and the use of American bottoms without in any way vitiating the most commendable features of the Seaman's Law. Messrs. Bulkeley Wells and B. B. Thayer, representing metals; T. H. Watkins, representing coal, and George S. Davidson, representing oil, were appointed to confer with other operators and appoint additional members of a committee to conduct investigations and make suggestions along this line. It was definitely agreed upon that this committee will consult with the American Steamship Owners Association, and that both Mr. Hoover, and the committee would enlist the co-operation of exporters of agricultural and other products.

OUR VANISHING GOLD PRODUCTION

By H. N. Lawrie
Economist, American Mining Congress

THE gold production of the world has declined from $469,000,000 in 1915 to $338,000,000 in 1920, a decrease of $131,000,000, or 28 percent, while that of the United States has declined from $101,000,000 to $51,000,000, a decrease of $50,000,000, or 49 percent. Of the total decline in the world's production during this period the United States has contributed 38 percent, although its normal quota to the gold production of the world has been about 21 percent.

In 1915 the United States produced 21.5 percent of the world's output of gold, while in 1920 it produced but 15.1 percent. In the former year the gold production of the British Empire was 63 percent of the total, while in the latter it had risen to nearly 70 percent.

The decline in the gold production of the world excluding that of this country from 1915 to 1920 was 22 percent, while that of the United States was 49 percent, or more than double.

Had the world's gold production for the year 1915 been maintained up to and including 1920, a larger production by $383,000,000 would have been recorded, or more than the total production for 1920. Had the gold production of the United States for the year 1915 been maintained up to and including 1920, a larger production by $149,000,000 would have been recorded. Due to the failure of this country to maintain its 1915 production it has contributed 40 percent to the failure of the world to maintain its 1915 production.

Gold Production

	World	United States	% U. S. to World
1915	$468,724,918	$101,035,700	21.5
1916	445,176,500	92,590,300	20.4
1917	419,422,100	83,750,700	20.0
1918	383,605,552	68,646,700	17.9
1919	365,166,077	60,333,400	16.5
1920	338,000,000*	51,186,900	15.1

* Estimated.

The principal reason for this extensive decline in gold production throughout the world has been the increased cost of labor and material since 1915 as against a fixed price for gold. There has been a factor, however, in all countries outside of the United States which has in a large measure compensated for these increased costs since 1919. The standard price of gold in London has been 85 shillings per fine ounce. But sterling exchange having become depreciated in terms of the gold standard, newly produced gold sold in the London market at auction averaged, during 1920, approximately 113 shillings per ounce, or a premium of about 33 percent. The British government in July 1919 permitted the export of newly produced gold from its possessions under a license, and since that time the gold producers of the Empire have been receiving an exchange premium. It will be noted from the table of declines that the decline of the world's production for 1919 was about half of that of 1918, which indicates the benefit of this premium.

In the United States, however, nothing has been done to in any way compensate for the increased cost of production, which accounts for the above facts which show to what extent the gold production of the United States has declined in excess of that of the remainder of the world. This is not a condition which can be pointed to with any degree of American pride when one considers the position of the United States as the creditor nation of the world. It seems all the more deplorable that the government should have been so negligent since the maintenance of the gold standard depends on the ability of the world to produce gold in which the United States should contribute its quota.

It is evident that a mere shifting of the position of gold that has been formerly employed in national monetary reserves is contributing nothing to expand the base upon which the entire credit and currency structure of the world has been created. The financial authorities of this nation are little concerned over this serious situation as they seem to regard the gold which we have acquired during and since the war as a fixed addition to the prewar gold reserve of this country. No consideration has been given to the fact that the loss of this gold to the reserves of foreign nations has had a marked effect in depreciating their currencies and therefore their purchasing power in this market. If the purchasing power of the remainder of the world is to increase to the prewar normal when currencies were at par, this gold must inevitably be returned to the gold reserves of such nations. Failing to do this, our export trade will continue to decline with its serious consequences upon the prosperity of the country.

The gold production of the world this year probably will not exceed $320,000,000, while the United States will probably not produce more than $42,000,000. Numerically more than 75 percent of the properties which produced gold in this country in 1915 have been closed down, allowed to fill with water, and expensive surface equipment to disintegrate. The gold producing power of the nation has been seriously crippled and with a continued "watchful-waiting" policy by the government still more serious results will be sustained by the industry. As a matter of national pride as well as a matter of necessity the government should remedy this situation if it is desirable to maintain the gold producing power of the nation on a level with the remainder of the world and to sustain the gold standard as the basis of all credit and currency transactions.

Annual Declines In Gold Production

	World	Percent	United States	Percent	World Excluding United States	Percent	Percent U. S. of World's Decline
1915–16	$14,548,418	3.1	$8,445,400	8.3	$6,103,018	1.7	58.0
1916–17	34,754,400	7.7	8,839,600	9.5	25,914,800	7.2	25.4
1917–18	35,816,548	8.5	15,104,000	18.0	20,712,548	6.2	42.5
1918–19	18,439,475	4.8	8,313,300	12.1	10,126,175	3.2	45.1
1919–20	27,166,077	7.4	9,146,500	15.1	18,019,577	5.9	33.7
1915–20	$130,724,918	27.9	$49,848,800	49.3	$80,876,118	22.0	38.1

WADLEIGH HEADS COAL SECTION AND FUEL PURCHASING COMMITTEE

F. R. WADLEIGH, head of the coal section of the fuel division of the Bureau of Foreign and Domestic Commerce, is a man of very wide experience, not only in all branches of the coal industry but in all practical uses of coal. That this experience will be utilized to the full is seen in the fact that arrangements have been made for Mr. Wadleigh to act also as consulting engineer to the Bureau of Mines on coal classification, commercial sampling and analysis, coal purchase and specifications, coal storage problems and other matters combining commercial and technical problems.

Mr. Wadleigh is a graduate of Princeton University. He has been both a railway employe and a locomotive fireman as well as fuel inspector and road foreman. He has had charge of engineering work, including inspection of coal and mines in South America, the West Indies and in foreign countries, particularly in connecnection with the exportation of Pocahontas coal. Before he began private practice as a consulting engineer, Mr. Wadleigh was assistant general manager of a large coal and coke company, in charge of all engineering and technical work, including coal preparation and mine examinations. The duties of this position required his spending several months in European and South American countries investigating export markets and prospecting for coal on the west coast of South America.

Member of Many Organizations

In 1913 Mr. Wadleigh began private practice as a consulting engineer. His work has since included investigations of export markets in Europe; valuation of coal properties in West Virginia, Alabama and Kentucky, and an extended investigation of eastern coal fields. At the time of his selection as a Department of Commerce official, he was assistant to the president of a New York corporation actively engaged in the exportation of coal and mine operation.

F. R. WADLEIGH
Head of the Coal Section of the Fuel Division of the Bureau of Foreign and Domestic Commerce, and chairman of the Coal Committee of the Federal Purchase Board. This committee will supervise the purchase of nine million tons annually.

During the war Mr. Wadleigh was a member of the Central Bureau of Planning and Statistics staff and was the author of several reports for the Shipping Board, including one of 500 pages with maps of the world's steamship bunkering trade. He has been a frequent contributor to the technical and trade press, and for two years was a member of the editorial staff of Coal Age. He is a member of the American Mining Congress, and likewise of the following organizations: American Institute of Mining & Metallurgical Engineres, American Society for Testing Materials (Member of Coal Specifications Committee), Franklin Institute (Member of Science and Arts Committee), American Chemical Society, American Electrochemical Society, Coal Mining Institute of America, Royal Society of Arts, London, International Railway Fuel Association, American Association for Advancement of Science, Princeton Engineering Association, American Geographical Society, American Museum of National History, Academy of Political Science, New York Zoological Society, Engineers Club of Philadelphia, Pan-American Society of U. S.

Heads Federal Purchase Board

Upon the organization of the Federal Purchase Board, which will operate under the Budget Bureau and supervise the purchase of coal and fuel oil for the government, Mr. Wadleigh was elected chairman of the coal committee, and a member of the fuel committee. The Interior Department asked for his selection on the coal committee because of his association with the Bureau of Mines in coal investigations. Official representatives of the Interior Department on the purchasing board are F. J. Bailey, assistant to the director of the Bureau of Mines, and A. E. Ambrose, petroleum technologist of the same bureau.

Large consumers will find it profitable to familiarize themselves with the data which will be contained in a report to be submitted by the coal committee of the Purchasing Board before January 1. This data will be the basis used by all government departments in placing orders for their coal supplies. The coal committee has conferred with operators and dealers in an effort to obtain a comprehensive view of the details in meeting the government's needs, including forms of contract and time and place of making purchases.

The Federal Purchasing Board's regulations will cover annual purchases of approximately 9,000,000 tons, two-thirds of which are anthracite. Among the largest federal users of bituminous are the navy, 2,500,000 tons; the army, 2,000,000 tons; Shipping Board, 2,000,000 tons, and various government buildings in the District of Columbia, 250,000 tons. The Treasury and Justice departments are also heavy users of bituminous.

The Navy Department has requested Congress to appropriate $12,500,000 additional for coal and other fuel for ships during the remainder of the year. It is estimated that the operating plans of the navy require the expenditure of $30,000,000 for the navy's fuel this year, but Congress appropriated only $17,500,000. Navy officials hold that unless the additional sum requested is allowed fleet operations will be materially curtailed.

THE ARMY GAS MASK cannot be relied upon for protection against the gases and foul atmosphere of mines. Official announcement to this effect has been made by the United States Bureau of Mines. The statement also says that the army gas mask is not as dependable in fire fighting and in ordinary commercial usage as it is upon the battlefield.

DECREASE IN MINE ACCIDENTS

FATALITIES in the mines were fewer in 1920 than in 1919. A complete report of both fatalities and accidents has been published by the United States Bureau of Mines, several months in advance of the usual date. It is the intention of the bureau, however, to make even a better speed record next year.

During the year 1920 there were 2,973 deaths and 206,000 injuries in the mines, quarries, coke ovens and metallurgical plants of the United States. These figures include all mines and mining plants with the single exception of iron blast furnaces. The number of men employed in these districts during 1920 was 1,088,000 who worked a total of 279,400,000 shifts, or an average of 257 working days per man. Accidents, based upon the rate of 300 working days, resulted in 3.19 deaths and 221.25 injuries per 1,000 employes. During 1919 the death rate was 3.63 per 1,000, and the injury rate 219.33 per 1,000.

In the various branches of the mining industry there were both increases and decrease in the number of men employed as compared with the number employed during the preceding year. Coal mining, for instance, employed 4,000 more and copper mining 4,000 less; iron mining employed 1,700 fewer men and the gold and silver mines 2,200 less. There was likewise a loss of 1,300 men in the lead, zinc and fluorspar mines in the Mississippi Valley states; also a loss of 4,200 at metallurgical plants and 600 at coke ovens. The payrolls of the quarries of the country, however, were augmented by the names of 11,000 new employes.

All employes worked a greater number of days in 1920 than in 1919. Metal mine employes gained an average of 15 days per man; quarrymen 14 days; workers in beehive coke ovens gained 32 days per man; those in by-product ovens 18 days. Each of the 780,000 men employed in the coal mines worked 32 more days last year than they did in 1919.

The Bureau of Mines in preparing its annual report compares the number of men injured to the population of a large city, and draws an object lesson therefrom in stating that while the number involved may seem large, it is in reality small as compared with the number which were injured in former years. The Bureau states:

"To visualize the number of men injured," the report says: "In the mining and metallurgical industries during the past year, it may be stated that it is roughly equal to half of all the men, women, and children in the city of Washington, the nation's capital. Large as the number seems, however, it is being almost annually reduced through the unremitting efforts of various agencies seeking to make the mines a safer place in which to work. These agencies include not only the United States Bureau of Mines and the various state mining departments, but also many mining companies that, at their own expense, maintain well equipped safety organizations among their employes. In addition, there are numerous miners' organizations co-operating in the common effort to increase mine safety."

The detailed report for the year is shown in the table on the next page.

INJURY RATE IN LEAD, ZINC AND FLUORSPAR INDUSTRIES

ACCIDENTS in the lead, zinc and fluorspar mines of the Mississippi Valley States in 1920 resulted in 36 deaths and 3,607 injuries, Bureau of Mines' statistics. The fatality rate based upon 300 working days was 3.27 per 1,000 and the injury rate 327.97.

There were 11,638 employes who worked an average of 283 shifts. The loss in the number of employes was 1,330. There was, however, a gain of about 1 percent in the total number of shifts worked and an increase of 31 in the number of working days per man. The fatality rate shows a reduction of .86 per 1,000, but the injury rate for 1920 shows an increase of 35.69 per 1000.

Of the fatalities last year, 26 occurred underground, 7 in shafts and 3 in surface shops and yards. Of the 3,607 injuries, 3,022 were underground, 201 in shafts, and 384 on the surface. The principal causes of the nonfatal accidents underground were: loading rock or ore at working face 852, haulage 442, fall of rock from roof or wall 369, drilling 289, trimber or hand tools 81, stepping on nails 81, machinery 80, falling down chutes, raises etc. 47, explosives 37, run of ore from chute or pocket 24, and suffocation from natural gases 13. Among shaft accidents, 76 were caused by objects falling down shafts, 76 by skip or cage, 14 by persons falling down shafts, and 2 by overwinding. Surface accidents resulted from the following: machinery 67, hand tools 50, stepping on nails 45, falls of persons 31, from mine cars, locomotives, or aerial trams 16.

In the total number of workers injured, Oklahoma led the list with 1614, followed by Missouri with 742, Tennessee 468, Kansas 373, Wisconsin 292, and Illinois 95.

TWO CENTRAL STATES TIED IN MINE RESCUE CONTEST RECORD

PENNSYLVANIA and Illinois have sent competing teams to all of the International Mine Rescue and Safety Meets held under the auspices of the United States Bureau of Mines since 1914. Five of such meets have been held, namely: Terre Haute, 1914, San Francisco, 1915, Pittsburgh, 1919, Denver, 1920, St. Louis, 1921.

There were eleven mine rescue teams at Terre Haute and fifteen at San Francisco; twenty-one at Pittsburgh; seventeen at Denver and fourteen at St. Louis. There were twenty-nine first aid teams at Terre Haute; twenty-six at San Francisco; eighty-four at Pittsburgh; sixty-eight at Denver and fifty-eight at St. Louis.

F. J. Bailey, Assistant to the Director of the Bureau of Mines, is the official in charge of mine rescue and safety work for the United States. Mr. Bailey has prepared the following summary and comments of and upon the meets which have already been held:

"Pennsylvania and Illinois have the distinction of having sent competing teams to all five of the mine-safety demonstrations held since 1914.

"Pennsylvania has led all other States in the total number of teams participating in the past five meets. To these meets, Pennsylvania has sent 87 teams, followed by Indiana with 57, Illinois 46, Colorado 29, West Virginia 14, and California 11.

"For sending the largest number of teams to participate in a contest held in another state Illinois takes first place. Forty-six teams have represented Illinois at meets held outside of Illinois' borders. In this respect Indiana ranks second, with 25 teams, Pennsylvania third with 19 teams, and West Virginia fourth with 14 teams.

"The holding of the meets in different cities for the convenience of the various mining sections of the country, operates, of course, to prevent the attendance of some teams from distant States because of large transportation costs, yet there are nine companies or miners' organizations that have sent teams to each of the last three meets, and nineteen companies or organizations whose teams have participated in each of the last two contests.

"It has been suggested that a prize cup be awarded at the next international meet to the team with the highest score in the last three meets."

METAL MINE ACCIDENTS

ACCIDENTS at mines producing gold, silver and miscellaneous metals resulted in 117 deaths and 5,704 injuries in 1920, Bureau of Mines reports.

States having the highest fatality rates for each thousand employes were: New York, 22.73; Washington, 12.30; Utah, 6.29; California, 5.83; Colorado, 5.35; and Arizona, 5.34. Those having the lowest fatality rates were: New Mexico, 1.34; South Dakota, 2.86; Idaho, 3.02; Alaska, 3.31; Nevada, 3.58; and Montana, 3.77.

The highest non-fatal injury rates were: 316.8 for Utah; 298.0, Idaho; 275.4, California; 266.7, South Dakota; 242.4, New York; 196.6, Montana; 157.7, Colorado; 134.4, Arizona; and 124.0, Nevada.

FEWER COAL MINE FATALITIES

ANOTHER REDUCTION in the coal mine fatality rate is shown in the statistics for August prepared by the Bureau of Mines. The official tabulations show that 141 men were killed in August, 1921, as compared with 203 in August, 1920. The decrease amounts to 62 fatalities, or practically 31 percent. The fatality rate was 3.34 per million tons produced as compared with 3.57 during August of 1920.

The average number of lives lost during August of each year from 1913 to 1920 has been 219, and the average August production for this period has been 52,209,000 tons. The fatality rate during this period has been 4.19 per million tons produced. The fatality rate for August of this year was, therefore, 62 percent below the average for eight years.

During the first eight months of 1921, 1,290 men have been killed in coal mine accidents as against 1,489 during the corresponding period of last year, the decrease being 199, or 13 percent. The output of coal for the same months was 322,060,000 tons during 1921 and 412,109,000 for 1920, the decrease this year being 21.9 percent. These figures represent a fatality rate of 4.01 per million tons mined in 1921 and 3.61 per million tons mined in 1920.

MINE ACCIDENT STATISTICS, 1920.

	Employes	Shifts	Days Active	Fatalities	Injuries (Disability 1 day or more)	Accident rate per 1000 300-day workers	
						Percent Killed	Percent Injured
COAL MINES(*a*)	780,000	188,000,000	241	2260	150,000	3.61	240.00
METAL MINES:							
Copper	35,254	11,182,119	317	128	12,047	3.43	323.20
Gold, silver, and misc. m. m.	29,933	8,354,830	279	117	5,704	4.20	204.82
Iron	45,990	13,574,788	295	106	9,072	2.34	200.49
Lead and zinc (Miss. Valley)	11,638	3,299,278	283	36	3,607	3.27	327.97
Nonmetallic minerals	13,768	3,950,878	287	38	2,132	2.89	161.88
TOTAL	136,583	40,361,893	296	425	32,562	3.16	242.02
QUARRIES:							
Cement rock	13,251	4,249,485	321	39	2,585	2.75	182.49
Granite	12,735	3,199,073	251	22	1,392	2.06	130.53
Limestone	43,151	11,154,653	259	96	5,321	2.58	143.11
Marble	4,438	1,304,552	294	4	400	.92	92.00
Sandstone and bluestone	4,466	1,062,161	238	2	356	.56	100.54
Slate	3,496	1,009,244	289	5	364	1.49	108.20
Traprock	4,951	1,147,480	232	10	799	2.61	208.89
TOTAL	86,488	23,126,648	267	178	11,217	2.31	145.51
COKE OVENS:							
Beehive	10,955	3,028,062	276	11	1,035	1.09	102.54
By-product	17,184	5,948,152	246	38	2,380	1.92	120.04
TOTAL	28,139	8,976,214	319	49	3,415	1.64	114.13
METALLURGICAL PLANTS:							
Ore-dressing plants	15,959	4,793,151	300	21	2,624	1.31	164.24
Smelters(*b*)	24,944	8,741,116	350	20	4,147	0.69	142.33
Auxiliary works	16,005	5,401,641	337	20	2,092	1.11	116.19
GRAND TOTAL, 1920	1,088,118	279,400,663	257	2973	206,057	3.19	221.25
GRAND TOTAL, 1919	1,087,197	250,297,399	230	3025	182,994	3.63	219.33

(*a*) Figures for coal mines are estimated, except for number of fatalities. Final data not yet available.

(*b*) Excluding iron blast furnaces.

SECRETARY FALL FAVORS "UNSHACKLING OF ALASKA"

FIFTY-SEVEN VARIETIES of bureaus cannot function in the best interests of Alaska, in the opinion of Secretary of the Interior Fall. President Harding, as well as Secretary Fall, is deeply concerned regarding the present and future welfare of Alaska, and it is the intention of both to "unshackle" that country from bureaucratic control.

During a recent trip to the west Secretary Fall in addresses and interviews announced the policy of President Harding. It was thought earlier in the year that President Harding and Secretary Fall would go to Alaska, but the peace conference intervened and prevented them from doing it. It is felt certain that President Harding and Secretary Fall will make a trip there next year.

In a recent interview Secretary Fall stated that the major objects of President Harding and his administration were to "unshackle Alaska from bureaucratic control and speed up reclamation of arid lands." The Secretary continued:

"There are three measures now under consideration to relieve Alaska of the burden of bureaucratic control: One of these is to give the president power to allocate control, and another provides for a commission form of territorial government. I have revoked a rule of my predecessor relating to the leasing of Alaskan oil lands, the rule of the former administration allowing a person to take up only a single claim of 2,500 acres, while present regulations allow as many as five claims, or nearly 13,000 acres per person. This more liberal regulation may assist in developing Alaska's oil fields.

"Little can be done with the northern territory until all Alaska departments and all authority to deal with Alaska is vested in a single branch of the government. Fifty-seven varieties of bureaus cannot function in the best interests of the territory. The laws pertaining to the national domain do not fit Alaska. The problems in that section of the country are peculiar to that section alone. Capital is what is needed. If it is available to open up the country to the miner he will see to it that he gets transportation for his ores. Moreover, the laws relating to the territory must be liberalized if Alaska is to be developed. Capital must be assisted by legislation. If the speculative element is too strong it will be difficult to get capital to go in. It is my present plan to have a practical railroad man make a survey of the Alaskan railroad situation and render a full report on it. I am interested in the territory's development and shall do all in my power to help it forward."

ALASKAN MINING CONDITIONS

IMPROVEMENT is noted in mining conditions in the Yukon valley, Alaska, according to reports received by the General Land Office from its Alaskan field division. Mining activity is noted at Mayo, on the Stewart River, and mining operations in the Forty-Mile district are also greater than last year. A new strike encouraged many old-timers to again take up prospecting. The gold output of the district is estimated at $225,000. Lack of transportation is said to prevent development of many gold and coal properties, although the Alaskan Railroad Commission is building a railroad from Fairbanks to Circle, which will open up large areas of low grade placer ground.

There has been some mining by small operators in the Rampart district. The Kantishna district has attracted attention of prospectors and several companies have installed equipment for placer mining for operations next year. A new silver-lead prospect has been found, indicating the presence of other lodes.

In the Tolovana district, 60 miles northwest from Fairbanks, many miners were unable to get water for sluicing and as a result the gold output has been small. A few weeks ago a new strike was made on Wilbur Creek, the ground giving $3 per pan, causing a small stampede and forecasting a great deal of work next year.

In the Fairbanks district only the higher grade placer ground was mined. Two dredges worked successfully in Fairbanks Creek. A number of small outfits were working in some oft he other creeks but the high transportation costs make it impossible for a miner to work any but the higher grade ground. Generally there is a low ebb in the mining industry in the Fairbanks district.

Mining in the Nome region has better prospects and conditions generally are somewhat improved. Five or six dredges have been operating and if pending negotiations are successful there will be one or two large dredges built next season.

The upper reaches of the Kuskokwim River are receiving more attention from lode and placer miners than any other district. A steamboat line was established on the river, two boats running from Bethel north. Two or three dredges were working and one company is developing a lode prospect on Nixon Fork. Many other new prospects are reported. The Alaska Road Commission will cut a trail from the Kantishna district by way of Lake Minchumina, which will shorten the distance from the railroad and provide a better winter route to the Kuskokwim Basin.

The prospective oil fields on the southern coast are attracting attention. Geologists and engineers representing some of the large oil interests have visited Cold Bay, Chitina Bay, Katalla and Yakataga Beach and are said to be favorably impressed with the possibilities. With the exception of two wells drilled on a patented claim near Katalla no work tending to develop oil has been done. In the Cold Bay field legal difficulties have arisen that are very embarrassing to those who would advance money to drill. The fault is largely with the leasing act which allows a qualified applicant to hold 2,560 acres merely by putting one stake in the ground. Prudence should make any one who thought he had a valuable claim put up four stakes to hold it but very few of them did, and the field is involved in endless conflicts. Another phase of the situation is presented when a company wants to make an agreement to drill on some of the existing permits. Many of the permittees want exorbitant sums for the right to drill and seem unwilling to meet the man with capital halfway. As a result it does not seem likely that any wells will be drilled next year in that field. These views are expressed in the Land Office report.

The Uakataga field will probably be prospected next summer and geologists think commercial quantities of petroleum will be encountered. The transportation question is very difficult and a large outlay of capital will be necessary to handle the oil after it is found. The only possible outlets are at Katalla, seventy-five miles west of the field, and Icy Bay, thirty miles to the east, neither affording shelter for boats.

The Land Office has had two surveying parties in the oil fields all summer, one in Cold Bay and one in Yakataga and future conflicts will be largely avoided.

Seepages have been reported near Anchorage and the country for miles around has been staked. A small seepage south of Anchorage did not expose the underlying strata. The oil seeps from a gravel bank. Many homesteaders are ready to offer final proof and unless the law is changed to permit acceptance of patents to the surface rights by entrymen these claims will be held up. There are many homesteaders on the lignite-bearing lands and along Kachemak Bay who cannot obtain patents. Some of them have been living on their claims for years hoping that Congress would pass such a law.

SECRETARY FALL FORESEES ECONOMIES IN ELECTRIFICATION

"THE NATION'S BUSINESS demands greater and cheaper production and better and cheaper transportation and the electrification of industries and railroads is the answer to that demand," is the conclusion reached in the Super-power Survey report which was submitted by Secretary Fall to President Harding on November 5. The Super-power Survey, as defined in the act of Congress authorizing it, is a "special investigation of the possible economy of fuel, labor and material resulting from the use in the Boston-Washington region of a comprehensive system for generating and distributing electricity to transportation lines and industries." Its main purpose is to devise means for saving fuel.

The report as submitted to the President states that until 1930 fifty million tons of coal can be saved annually by the unified operation system in the Boston-Washington industrial region. If the industries in this region are motorized, the report continues, the sum of $190,000,000 in money will also be saved annually.

The study of this region was facilitated greatly by an advisory board of business men, and by an engineering staff headed by W. S. Murray of New York. Secretary Fall has requested the board of business men to continue their public service in the further consideration of the legal and financial aspects of the Super-power project. Only the engineering features of the project are presented in the report which Secretary Fall has delivered to the President.

Secretary Fall's analysis of the report includes the following:

> Economy of investment and economy of operation are the two ends sought by this plan, the outstanding feature of which is a great network of inter-connecting transmission lines which makes a system out of many units. "In interconnection is superpower" is the new version of an old adage, and here interconnection will mean 970 miles of 220,000-volt lines and five times that mileage of 110,000-volt lines. With these major lines, the 1,200 miles of lines now operated at 33,000 volts or more will become simply distribution lines for the local public utilities. This transmission network and its substations would require $104,000,000 by 1930, and the total investment cost of the system the same year is given by the engineers as $1,109,564,000 of which $693,218,000 would be new money, for more than $400,000,000 worth of existing steam-electric and hydro-electric plants are retained in service.

The thirty-five pages of the report devoted to the proposed electrification of the heavy-traction railroads presents results of even more general interest than the detailed analysis of the industrial use of electric power. The question of railroad electrification must be decided according to density of traffic, and so it is that of the 36,000 miles of main line, yards, and sidings in this super-power zone, only about 19,000 miles could be profitably electrified. This electrification would cost nearly a half billion dollars, but it would save from 11 to 19 percent on the investment, or an average of 14 percent, according to the report. Electrification is the next step in railroad expansion absolutely necessary to increase both the capacity and the efficiency of our transportation system. Incidentally, the annual saving of 9,000,000 tons of coal by the railroads would greatly increase the available car supply. The report figures no returns resulting from the abolition of the smoke, cinders, and noise of the steam locomotives, but the ordinary citizen will find some comfort in the abatement of these nuisances.

Secretary Fall's opinion of electrification as contemplated under the Super-power Survey was expressed in the following words written to the President:

> "I believe the engineering facts and economic conclusions here presented will command the attention alike of the financiers, railroad executives, public utility officials, industrial leaders, and others of that large group of our citizens of large vision who are building for the America of tomorrow. Our present-day achievements have largely come through our country's unparalleled wealth in raw materials. The larger use of our sources of energy must be planned with every effort to avoid waste. Had the superpower project outlined in this report been in operation in 1919 it is believed that twenty-five million tons of coal could have been saved, and with the rapid growth expected in the present decade the saving possible in 1930 by the interconnected electrification of industries and railroads would be fifty million tons.
>
> "However, these economies on a truly national scale will affect not only coal but capital expenditures as well, and especially the output of human energy. More and cheaper electricity must surely add to the comfort and prosperity of our citizens, and this report on a superpower system is submitted as a contribution of the Department of the Interior to the common welfare."

COAL STORAGE PROBLEMS

EXPERTS studying the fuel problems connected with the proposed Super-power project are of the opinion that a power plant using 1,260,000 tons of bituminous annually might store a six months' supply with practicality. Admitting that storage of this amount might appear to be excessive, they point out a number of advantages as offsetting the increased handling and space required.

Among the chief of these is the claim that it would effect a partial stabilization of the mining and the transportation industries through bringing about a more uniform demand for fuel and thus tending to increase the operating load factor of these two industries. This is held forth as being a long step toward reduction of the price of fuel to the consumer because of the economies which it would bring in mining and transportation costs. Another advantage claimed is the opportunity which would be offered consumers to purchase coal at the lowest market price. It is claimed that the ability to avoid having to go out into the open market and pay spot prices for coal in times of scarcity would more than offset the cost of adequate storage facilities. Emphasis is also laid upon the benefits which would be derived through insurance against interruption of service due to lack of coal.

OCTOBER ANTHRACITE

Anthracite shipments for October totaled 5,872,-753, tons, an increase of 353,371 tons over September. There was a decrease, however, of 368,118 tons as compared with October of last year. October of this year produced fairly average shipments, however, when it is considered that several mines in the Scranton district were prevented from operating by the Kohler act. Shipments since April 1 amounted on November 1 to 40,223,367 tons, an increase of 502,713 tons over the corresponding period of 1920.

DR. BAIN TALKS ON HARDING'S LETTER TO MINING CONGRESS

IT IS ENTIRELY PRACTICABLE to store coal, in the opinion of Dr. H. Foster Bain, director of the United States Bureau of Mines. Following the sending of a letter by President Harding to the American Mining Congress convention anent recurring coal troubles, Dr. Bain gave out an interview to the effect that seasonal demand, intermittent employment and storage, all of which were touched upon by the President, presented no mysterious or unsolvable technical or mechanical questions.

The request of President Harding, published in the November issue of the Mining Congress Journal, is being given careful consideration by the American Mining Congress. Dr. Bain's statement upon the questions involved follows:

"The adoption of a general policy which would provide reservoirs of bituminous coal to be drawn upon in times of great demand or of low production is entirely a commercial question," continues Dr. Bain. "If the producer, or the dealer, or the large consumer, could produce or buy coal in the spring or summer for a price low enough to justify the cost of putting coal in storage and its rehandling, minus a fair insurance rate that he would be guaranteed a continuous supply in time of need, storage would become common.

"This lower seasonal price of coal could be brought about by concessions on the part of the miner, the mine operator, and the railroads. For the sake of obtaining more regular employment, the miner might accept a lower wage or rate in certain seasons of the year, although this is doubtful; but the mine operator might accept less profit during the same periods in order to keep up his production. Steady and regular mine operation at capacity production always means lower production costs, as compared with intermittent operation and lessened production. Overhead expenses—taxes, interest, management, together with the expense of keeping the mine in proper working condition—all go on, whether production is light, heavy, or has entirely stopped. The railroads could assist by accepting a lower freight rate on coal moved in the spring and summer.

"The small individual consumer, especially in the cities, often has inadequate storage space. Storage at the mine may allow a steady working-day in time of shortage of cars but will not ensure steady seasonal operation. Again, large scale storage at the mines does not do away with the difficulty of transportation often experienced to the points of consumption. Moreover, a great many mines are in a hilly or mountainous country, where but little, if any, space is available for large storage capacities. The proper place, therefore, for storage on a large scale is at or near points of consumption.

"This latter kind of storage involves the use of a large plot of ground, as coal stored 10 feet high allows slightly less than 10,000 tons storage per acre. The purchase and installation of mechanical coal handling devices and systems would also be necessary. There are in existence numbers of American engineering and machinery concerns who have successfully designed and built many coal storage systems for public utilities and other corporations which at present store considerable quantities of coal. In addition, there should be a fuel engineer in charge who has a practical and technical knowledge of the way in which different kinds and sizes of bituminous coal will probably act in storage, and who knows the engineering features vital to the economical handling of coal. These three factors are today easily obtainable in the United States; their purchase and employment involve large capital expenditures on which an adequate return must reasonably be expected.

"When, at such a projected storage plant or yard, coal can be purchased at a delivered price sufficiently low to secure a fair return on the investment, after adding the operating costs of storage and rehandling, then coal storage yards will become established near all of the points of heavy consumption and the present seasonal variations will be largely avoided.

"There are no mysterious or unsolvable technical or mechanical questions that block the way to the adoption of a general policy of storing bituminous coal, in either large or small quantities."

COAL STRIKE MAY FOLLOW DECISION ON CHECK-OFF INJUNCTION

DANGER of an immediate coal strike, or general "vacation," again threatens, in the opinion of operators who attended the hearing before the U. S. Circuit Court of Appeals of the so-called "check-off injunction case," which originated in the court of Judge Anderson, of Indiana.

Judge Anderson, it will be remembered, issued an injunction which, among other things, restrained operators from observing the check-off provisions of their contracts with the United Mine Workers, and many miners immediately went on strike. The Circuit Court of Appeals modified the injunction in respect to the check-off, thus restoring its operation. At the Chicago hearing on November 16 the operators asked that this modification be vacated and that Judge Anderson's injunction be re-instated. The Court of Appeals is expected to give its decision any day, and those who heard the arguments are of the opinion that the injunction will be re-instated. There will then either be a strike, in which the mine workmen will flaunt the law and the courts, or a back-down on the part of the union.

PROCESS FUEL STUDIES

IN CONSIDERING the possible use of process fuels and pulverized coal for consumption in large steam-electric plants, engineers working on the Super-power project applied their studies to the four processes which have already proven of commercial utility. Four sources of process fuels presented themselves for investigation: by-product coke-oven plants furnishing coke; by-product coke-oven plants furnishing gas; low temperature distillation plants furnishing semicarbocoal; and bituminous gas producers furnishing gas. With the exception of gas from by-product coke-oven plants, process fuel is shown to cost more than coal. Moreover, the heavy investment required for a coke-oven plant producing gas as a process fuel, combined with the transportation difficulties in distributing the by-products, makes its use as a process fuel impracticable. The coke produced by one such plant would amount to 26 percent of the entire amount of coke now used by the super-power district, embracing territory between Washington and Boston.

Pulverized coal has been successfully used in cement kilns and metallurgic furnaces for some time, according to the report submitted by experts making a special study of this problem in connection with the project, but it has been only in recent years that enough progress has been made to warrant its serious consideration. It is stated that no large power plants have used this form of fuel long enough to give a reliable indication of the results.

SOME ANTHRACITE FACTS AND PROBLEMS

By Edward W. Parker

THE ENTIRE PRODUCTION of anthracite comes from an area containing less than 500 square miles in the northeastern part of Pennsylvania. This represents only about 1/10 of 1 percent of the bituminous coal fields of the country, which are scattered over some thirty different states. From this small area of less than 500 square miles there has been produced in the century of anthracite mining a total of 2,750,000,000 gross tons, or 22 percent of the aggregate output of anthracite and bituminous coal in the United States. The annual production of anthracite exceeds the total production of coal in any other country except Great Britain and Germany. But it has reached its limit. The anthracite mines, unlike the bituminous mines, can no longer respond to the increasing demands of an augmenting population, but on the other hand are faced with the problem that the time is not far distant, a few decades at most, when the inevitable period of decline will begin.

The bonanza beds which have produced the cheaply mined and also the high grade anthracite of the past are rapidly approaching exhaustion. This is particularly true in the Northern or Wyoming Region, where the beds lie relatively flat and shallow and are consequently more easily and cheaply mined. The rate of extraction in the Northern or Wyoming Region has been much more rapid than in the Lehigh and Schuylkill Regions, where the mining problems are much more complex.

The anthracite operators are alive to the serious situation that confronts them in the not distant future. They realize that in order to meet the demand for the present day tonnage attack must be made on the deeper and thinner beds, which, experience has shown, carry higher percentages of impurities, the removal of which requires more care and consequently more costly preparation. In an official report which the writer made to the United States Geological Survey as long ago as 1910, he said:

DR. E. W. PARKER
Secretary Anthracite Bureau of Information, Philadelphia

"The conditions under which the anthracite mines are operated, the greater depths to which the workings are carried, the consequent increased expense of mining, and the increasing cost of labor all contribute to make anthracite fuel more and more a luxury. No hope is held out to the consumer that anthracite will in the future be sold at lower prices than those which prevail today, but, on the other hand, there is every reason to believe that prices must advance in accordance with the increasing cost of production. It is only by reason of economical administration that prices are not higher than they are."

These conditions are even more in evidence now than they were a decade ago. Recourse is already being made to the deeper and thinner beds, and as these workings become deeper, necessarily the cost of production, outside of any consideration of wages, must constantly increase. With the increased pressure due to greater depth more support must be given to the haulage ways and working places, more water must be pumped and to greater heights, more air must be provided for ventilation, more expenditure in every way must be made per ton of coal mined and prepared for market. To meet these conditions every means that engineering skill and administrative ability can devise is being and will be employed. All that can be hoped to be done, however, is to keep the production costs from rising to such an extent that prices will be prohibitive. Every ton of coal mined today costs a little more than a ton mined yesterday and a ton mined tomorrow will cost more than the ton mined today. Such an increased cost is incalculably small when applied to a single ton, but it will be measurably felt in the production of 80,000,000 tons a year for a period of ten years.

Unfortunately, every ton of the 80,000,000 tons produced is not under present conditions available as domestic fuel. In the first place about 11 percent of the total production is consumed in the operation of the collieries and breakers, leaving say 70,000,000 tons of commercial fuel. Under the best practice the mine run production cannot, on the average for the region, be made to yield more than certain percentages of what are known as the prepared or domestic sizes. That is to say, for every hundred tons of coal that comes to the breaker, the following is about the best that can be obtained of domestic coal:

Egg	13.5
Stove	18.5
Nut	23.
Pea	8.5
	63.5

Of the four domestic sizes one—pea coal—sells at little, if any, more than the actual cost of production in normal times, and under conditions that have existed during the last few months considerable quantities of pea coal have been forced on the market at prices which did not equal the cost of producing it. In fact during all of the past summer stove coal was the only size in active demand and operators have been compelled to insist upon dealers taking certain proportions of the other sizes along with the stove coal. It is a self evident proposition that no industry can continue to produce 100 percent of output when the market will absorb only one grade that represents less than 20 percent of the total.

If, however, all of the domestic sizes could be disposed of as they are produced, and were not subject to any fluctuations in demand, there still remains the fact that they altogether constitute but 70 percent of the total product of the mines and it must be remembered that it costs just as much to produce a ton of buckwheat No. 3 or barley, selling at $1.50 a ton as it does a ton of stove or chestnut selling at $8, or $8.25 a ton. The 30 percent of the output represented by the small or steam sizes sold in competition with bituminous does not realize the cost for labor alone. It has been shown in some of the recent advertisements authorized by the General Policies Committee of Anthracite Operators that the average return to the anthracite producer for his product is $6.15 a ton at the prices prevailing this year. That is to say, his average realization on his entire production is $2 a ton less than you pay for your domestic fuel at his breaker.

The Federal Trade Commission in its report on anthracite (June 30, 1919) gives the result of an investigation extending over a period of six years from January, 1913, to December, 1918, inclusive. It covered the entire war period and it shows that the producer's margin on the average during the six years ranged from 19 cents to 72 cents a gross ton. A weighted average of the table given in the report shows that the average margin for the entire period was 42.3 cents a ton. If this margin were all net profit it would not represent a fair return on the investment, for, taking the Engineers Committee of the United States Fuel Administration as authority, the average investment in an anthracite colliery is from $7.50 to $8 per ton of output. That is to say, a property capable of producing 100,000 tons a year requires a cash outlay of from $750,000 to $800,000. Ten percent net return on capital invested in an industry involving such hazard as anthracite mining would not be unreasonable. It does not amount to half of 10 percent.

During the war, when the anthracite industry was under the control of the Fuel Administration, there were three instances of advances in wages to meet the increase in the cost of living, although the contract entered into in 1916 with the United Mine Workers of America was for a period of four years ending March 31, 1920. When the first of these increases was granted it was estimated that the additional cost would be 45 cents a ton, but the Fuel Administration, believing that the producing companies had allowed a factor of safety in their estimates, would permit an advance only of 35 cents a ton in the price. The Committee of Engineers subsequently reported that the increase in cost was 76.8 cents a ton, the operators, of course, absorbing the difference. The loss thus sustained was partially but not entirely made up in the negotiations of the later advances.

Dr. Garfield, however, had the grace to announce when releasing the anthracite industry from government control that "an investigation had shown that the general increases in the price of materials and labor had raised the cost of mining anthracite to such an extent that many of the companies were not receiving a fair return and that some producers of necessary coal were actually sustaining a loss on the sale of coal at the government prices, in spite of the two increases allowed on account of advances to labor."

Anthracite operations are now being carried on under a wage scale based upon the Award of the Anthracite Coal Commission of 1920, and which, by order of the President himself, were written into a contract which does not expire until March 31 of next year. The anthracite producers have definitely stated that they will not break this contract and the leaders of the miners with even more emphasis have announced that no reduction in wages would be agreed to.

One word more before leaving this part of the discussion. The anthracite industry is the only one of the important American industries that did not partake of wartime profits. No surpluses were garnered into the treasuries of the anthracite companies from which may now be drawn funds to permit of selling their product at a loss which some of our newspaper friends have been generous enough to suggest should be done. The Interstate Commerce Commission has stated that there was no prospect of any reduction in freight rates before next spring, and in the more recent discussion of the necessity for certain reductions in transportation costs agricultural products are the only ones to which the reductions should be applied.

In spite of the warnings that have been given many consumers have held off placing their orders, relying probably on the influence of a "buyers' strike" to force down prices. It is not in the cards, and those "who have not while they may" laid in their supplies during the summer will have no one but themselves to blame if they experience any trouble or discomfort the coming winter. Many there are too, unfortunately, who have not had the funds to lay in their fuel supplies in advance. These are largely consumers of chestnut and pea coal, the fuels for small houses and small stoves. This has resulted in the stocking of large quantities of these sizes in the storage yards, from which they can be readily distributed when the times comes, and this class of consumer will be taken care of.

Whether the hope for reductions in cost of production and of transportation will take place in the spring or not it is, of course, impossible to say. Let us suppose that through a change in labor costs of producing anthracite might be reduced to within possible speaking distance with those that prevailed in 1916. Whatever base may be reached it will be one from which because of the natural conditions mentioned in the earlier part of this discussion, an ascending tendency in cost and consequently in price must be expected. However unwelcome the information may be the fact remains that the days of cheap anthracite have passed. It is almost today a luxury fuel and it will become more and more so as the deposits are depleted and the period of decline in the quantity of annual production approaches.

There is but one way in which this tendency toward increasing cost of domestic anthracite may be combated, or postponed, and that is by the more efficient and economical utilization in its consumption. That is up to the consumer.

A greater utilization of the smaller or steam sizes is an economy factor of importance, upon which special stress is laid in a pamphlet just issued by the Anthracite Bureau of Information for general distribution among consumers. Of even more importance to the householder, however, particularly the one who is contemplating a change of his heating apparatus or the building anew, is the fact that there are now available magazine feed furnaces which are especially adopted to the use of buckwheat No. 1. This size sells at prices below those of the larger sizes and enjoys a lower freight rate from the mines to the consumer. The magazine permits slow, automatic and regular feeding of coal to the combustion chamber and eliminates much waste common in use of ordinary types of furnace construction.

STANDARDIZATION NOT A BAR TO PROGRESS OR INVENTIVE GENIUS

By E. D. Knight

THE AVERAGE coal operating man if approached on the subject of the Standardization of Mine Drainage probably would think immediately of mine pumps. If he were one of the unfortunate, who is forced to worry about repair parts for half a dozen different makes and styles of pumps all of approximately the same capacity and used for the same duty, he would be almost sure to do so. This promiscuity of similar equipment might be due to his own haphazard methods of purchase or it might be an inheritance, but his conclusions in either case most likely would be one and the same. He would think at once what a good thing it would be for him if all manufacturers of mine pumps turned out equipment on which, in the same sizes and capacities, all parts were interchangeable. This would seem to him an almost ideal state of affairs, and one which in his particular case would eliminate considerable cost and trouble The question is, however, just how far into such a condition his thoughts would carry him.

Let us suppose that a complete standardization of pumping equipment along the lines suggested actually did exist. What, then, would be the result? To the manufacturer it would mean the stifling of progress and inventive genius in the design of his equipment. It would mean conformation to rigid standards down to the smallest bolt or nut, which might or might not fit in with his ideas of efficient and economical pump delineation. It would mean that if any progress were made it would have to come through either government experimentation or through a centralized body of representatives of all manufacturers, and should such body function efficiently, it would be constantly discovering refinements in pump construction which would tend to make obsolete different standardized equipments soon after they were put on the market.

E. D. KNIGHT

Chairman of the Sub-Committee on Mine Drainage, Standardization Division, American Mining Congress.

To the user it would mean that he was deprived of any benefits which might accrue to him through the opportunities of competitive buying. It would mean that he must take the equipment offered him, whether or not it conformed to his ideas of what he wanted. It might mean that the manufacturer, knowing that any improvements put on his pump would have to go on all pumps and that the user must accept the pump anyway, would decide that progress was not worth while, and thus the purchaser would be forced to accept an article of inferior quality. But worst of all, it would be quite likely to mean a combination and arbitrary price fixing, such as the coal operator is forced to go up against in several lines of machinery already, and against which he is powerless to retaliate in kind if he desires to retain his own freedom.

Would it not be better then, instead of attempting to enforce a standard which for their protection might cause manufacturers to bring their equipment down to the level of the mediocre, to try to eliminate the unfit without in any way limiting progress or handicapping inventive genius?

It is to this end that the committee on the Standardization of Mine Drainage of the General Committee on the Standardization of Mining Machinery, Coal Mining Branch, of the American Mining Congress, have tried to direct their efforts. While they realize that mine drainage problems differ widely due to local conditions, they, nevertheless, believe that these may be separated into several general classes from the standpoint of service required from mine pumps. They have attempted, therefore, in their report, to divide drainage problems into these several classes and to set down certain specifications for pumps suitable for service within each class, which in no way limit the design of said pumps but rather set for each a criterion of performance within its group.

It is to be hoped that these recommendations will bring about a desirable condition in the following manner: They will be available to the mine operator, who either from inexperience or for any other reason does not know just what he wants when he is contemplating the purchase of a pump. By consulting them and insisting that any pump he buys conforms to them, he eliminates equipment improper for his service. With no demand for them, unfit pumps would be forced off the market, and all manufacturers would have to come to a proper standard of performance; while at the same time they would maintain their competitive individualities of design and progress.

Let us refer back for a moment to our original supposition, that the average coal operating man upon being approached on the subject of the standardizing of mine drainage would be likely to think at once of standardizing mine pumps. Mine drainage does not always mean pumping, but unfortunately there are all too many of us who seem to be under the impression that it does. So firmly is this idea fixed in the minds of some of us that we often refuse to consider anything else. Many times the operator on being confronted by a new water condition goes to his mechanical man and says, "What sort of a pump shall we put here?" instead of saying to his engineer, "Would it be possible by a little simple ditching to eliminate this water or to carry it to the suction of a pump already installed?" Or if he has neither of his own to consult, he is all too likely to call in a pump salesman rather than first employing an engineer. It is the one of the first principles of mechanics that one large unit working to capacity is more efficient than several small ones, and yet in many cases pumping inside the mines is handled by methods just the reverse of this, and the same water is often pumped two or three times when by a little more care and investigation before laying out the installation one pumping would suffice.

Sometimes in the case of drift mines it is possible by constructing an extensive and permanent system of ditch drainage either to handle all the water from the mine or to collect and bring outside the water discharged by small pumps used in development works. Too often, however, the initial cost involved in such a layout forms a barrier beyond which the operator refuses to look, thereby losing sight of the fact that when such a drainage system is completed the cost usually stops, while an elaborate pumping equipment generally means continued expense for depreciation, maintenance, and attendance throughout the life of the mine. Also drainage ditches when properly put in are more reliable than pumps and function automatically during shut-downs from any cause whatsoever, while pumping involves expense for power and attendance whether coal is being produced or not.

There is a further point which coordinates the above with the first part of this article. If advantage were taken of all opportunities to utilize other methods of drainage the number of pumps purchased would naturally be decreased and the standards of pump manufacturers would consequently be raised due to keener competition.

Needless to say, the points to be considered in investigating drainage ditch possibilities and proper methods of laying out same are a part of what the committee on drainage is trying to bring before the operating public.

The writer recently had occasion to be in the office of a concern which sells mine pumps. The sales manager of this organization said to him, "Do you know? A man called me up this morning, whom I believe you would consider a good operating man. He said, 'I want a three-inch pump; have you got one in stock?' I asked him, 'What capacity do you want?' 'Hang the capacity,' he said, 'I want one with a three inch suction and a two and a half inch discharge.'"

This condition, as inconceivable as it may seem, does actually exist in a good many cases, and for this reason the committee on mine drainage has included in its report a number of rules for guidance in the installation and maintenance of mine pumps which it is hoped may be adopted as standard practices and work for elimination of such ill advised occurrences as the above mentioned; as well as to improve methods and mediate against the careless treatment to which many pumping installations are now subjected.

It is not the writer's idea or intent to give the impression that any of these, perhaps ideal, conditions can be brought about simply by consultation and adherence to the committee report, as it now stands, for this is merely in its infancy. It is his idea, however, to set down the aims of said committee for the perusal of mining men and, should they think the result worth while, to ask their whole-hearted co-operation in achieving it.

MEMORIAL TO FRANKLIN K. LANE

ONE OF THE LOFTY PEAKS of the Rocky Mountains has been named in memory of Franklin K. Lane, Secretary of the Department of Interior. The peak is located in Tatoosh Range and is in Mt. Rainier National Park. The United States Geographic Board issued the following announcement:

Lane Peak, three pointed (altitude 6,000 feet), in Tatoosh Range, rising ⅓ mile northwest of Cliff Lake, Mount Rainier National Park, Pierce County. Washington. (In honor of the late Franklin K. Lane, former Secretary of the Department of the Interior.

The proposal of giving this name was made by the Rainier National Park Advisory Board, Seattle, Washington, Ashael Curtis, chairman.

GOLD COMPANY WILL QUIT UNLESS McFADDEN BILL IS PASSED

UNLESS the McFadden Bill is enacted, another gold mine will be lost to the country. The necessity for the enactment of legislation relieving the gold industry is set forth very pointedly in a letter from A. C. Ludlum, president of the Derry Ranch Gold Dredging Company, to Dr. H. Foster Bain, director of the United States Bureau of Mines. Mr. Ludlum wrote as follows:

"It just occurred to me that the closing down of another gold mine in this country and a brief account of the company's operations might prove of interest to you. I therefore submit the following facts:

"The Derry Ranch Gold Dredging Company completed its dredge at Leadville, Colorado, and began operating just five years ago. Our operating costs during the first two years were about 7 cents per cubic yard and after that they began to climb. Last year they were 14 cents per cubic yard and this spring when we found that we did not make any money under present conditions, we closed down the dredge and we expect to sell and dismantle it. That is, unless the McFadden Bill should be passed in the near future, and if this should happen before the dredge is dismantled we would undoubtedly start up operations immediately.

"During the five years existence of the dredge, we have produced over $750,000 in gold. We still have enough unworked ground averaging about 12 cents per cubic yard that would last for quite a few years, but if the dredge is dismantled the remaining gold will in all probability not be recovered in our day, as it would not pay to install another dredge on the balance of the ground remaining unworked.

"Our experience is only one of many as you well know. The French Gulch Gold Dredging Co. of Breckenridge went into the hands of a receiver this spring. This company had operated some fifteen years and has a gold production of over $1,250,000. The Tonopah Placer Co. of Breckenridge, Colo., is only operating one dredge at present.

"The gold dredging industry and its consequent gold production is seriously endangered unless some relief is provided and the passage of the McFadden Bill would seem to provide adequate relief to the gold producer and stimulate the gold production."

OIL SHALE WORK EXTENDED

THE LABORATORY in which the Bureau of Mines is doing co-operative oil shale work at Boulder, Col., has been enlarged and considerable new equipment has been installed, in preparation for more extensive work on Colorado shales. Additions to the staff at the laboratory include Douglas A. Fell, a native of New South Wales, whose father is the owner of the only producing oil-shale company in Australia.

Important changes have been made in the temperature measuring apparatus and in the drive mechanism of the horizontal retort at this station. A new location of pyrometers in the retort proper and the retort furnace is expected to indicate more accurately the temperature of the shale in the retort and also make possible more definite control of retorting conditions. During the past two years several attempts have been made to classify oil shales by chemical determinations of various sorts but these have not been successful.

Experiments in refining the oils produced from Colorado oil shales have been started. Various methods of procedure will be tried and the concentration of the refining reagents changed until the most satisfactory results have been obtained. For the purpose of comparing different oil shales it has been tentatively agreed that the most satisfactory oil is that which yields the highest percentage of crude naphtha containing the lowest percentage of unsaturated hydrocarbons.

VALUATION TERMS AS APPLIED IN THE MINING INDUSTRY

By Wm. H. Kobbé*

THE SUBJECT of valuation of mining properties has been given much thought and study during recent years, particularly in connection with the assessment of Federal and State taxes based upon net income or the ad valorem method.

A valuation or engineering appraisal is necessary to properly establish true market values for invested capital and as a basis for allowed depletion of mineral reserves.

The subject of valuation in its economic aspect becomes exceedingly abstract and involved and leads to interminable discussion unless approached with a clear understanding of the limitations imposed by practical application.

Various Government Regulations have attempted to define certain valuation terms, but the results are not entirely satisfactory and are more or less interpretative of terms or phrases occurring in the various revenue acts.

The Glossary of Valuation Terms presented in this article has been prepared with a view to defining the more important economic and income tax expressions for the every day usage of the mine operator or business man. Neither academic nor economic exactness is claimed for these definitions and they are offered with the full conviction that they are open to argument or criticism. Only through such argument and criticism is the subject advanced toward enlightenment.

If the Glossary will at least encourage consistent use of valuation terms or become an incentive for further thought and study, it will have served the purpose for which it was prepared.

Some of the terms are interesting because of certain peculiar reasons prompting their definitions. The peculiarities are noted in the following paragraphs.

WILLIAM H. KOBBÉ

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In defining the application of "value" it would seem important to bring out the thought that something more than "exchange value" is frequently a determining factor. That "there can be but one correct amount for any particular value, but there may be several different values for the same commodity" may be illustrated by mine rails. There is but one correct value for such rails as metal; but one correct value as rails; and but one correct value as a mine railroad.

The word "fair" has been defined because of its qualifying character in the phrase "fair market value."

"Fair market value" has been discussed pro and con in page after page of legal briefs and decisions. The Glossary has made use of the commonly accepted definition with the added provision that "both seller and purchaser possess enlightened knowledge as to the particular commodity changing hands." This provision appears essential and is of peculiar application to mineral properties. A technical ceramist or economic geologist recognizing the distinctive qualities of a deposit of kaolin might very well persuade the farm owner to part with it for a consideration in no degree a measure of its "fair market value."

The term "service value" is not only important but is believed to be new to income tax procedure. It is peculiarly applicable to mineral deposits and the definition requires no comment.

The definition for "utility" is possibly too concise and may be open to criticism. The purpose of its inclusion was to differentiate between farm land values and mineral values, especially in those industries dependent upon deposits of inorganic nonmetals such as sand and gravel and various rock products.

No attempt has been made to define good-will, but a definition of "popular demand" appears desirable on account of its application to certain mineral deposits.

The term "economic injury" is rather clearly defined and has been included in the Glossary for the purpose of enabling the recognition of true depletion in spite of compensating appreciation due to other causes.

The definition of "minerals" has been taken from the Regulations and is a popular rather than a technical conception and therefore lacking in precision.

"Mine" has been defined as "a commercial deposit of mineral irrespective of method of recovery" because this term is used in the Regulations in connection with "discovery."

The definition of "discovery" is important. The Regulations simply state that discovery means the discovery of a "new mine." Such a definition is not particularly helpful unless "new mine" is defined. With this idea in view, the definition of "discovery" in the Glossary is an attempt to state specifically the true intent of the Regulations. It is submitted with the conviction that each case or claim for discovery must be decided on its own merits. If the definition is conceded to be correct in principle, there should be no question of its true and conservative application in many specific instances.

With the foregoing explanation of certain terms and the understanding that the Glossary is simply a translation, it is presented to the industry with the hope that it will lead to more consistent usage and encourage helpful discussion.

Glossary of Valuation Terms

VALUE. Means not only exchange value in dollars, but may properly be used to measure utility. The utility of such an unexchangeable article as the human hand is measured in dollars for the purposes of award or compensation. There can be but one correct amount for any particular value, but there may be several different values for the same commodity.

FAIR. The word "fair" implies justice.

FAIR MARKET VALUE. Is the amount of money which would induce a sale as between a willing seller and prudent purchaser; provided both seller and purchaser possess enlightened knowledge as to the particular commodity changing hands.

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SERVICE VALUE. As applied to mineral deposits this term has somewhat the same meaning as "intrinsic value," excepting that it is a broader term and includes the extrinsic factor of availability. It therefore may be defined as the value due to quantity, quality, and location, irrespective of ownership or management. To use a marine expression, it is the "as is and where is" value. It exists regardless of earnings.

GOING VALUE. Also known as "Going concern" or "Going concern value." It relates to establishment of earnings and may accrue in addition to and over-and-above "Service Value." The wise exploitation of a mineral deposit for profit results in a certain going value accruing to such deposit through actual monetary returns.

UTILITY. Implies principal use. Its value is measured by its suitableness for the service intended.

POPULAR DEMAND. Is used in its ordinary meaning. It is applicable to mineral deposits on account of the insistence of the trade for certain recognized brands or descriptive appellations. For example, certain marbles, precious stones and mineral products under trade names have become so popularized that proper consideration of this fact is essential to a fair valuation.

Asbestine, celite, scouring powder, green slates, Vermont, Tennessee, or Georgia marble, and Mexican opal are a few examples of real or fancied superiority possessed by mineral products from special localities or sold under popular names.

ECONOMIC INJURY. Results when a portion of a valuable mineral deposit is removed or depleted. Such economic injury is suffered irrespective of appreciated value due to enhanced real estate prices or other extrinsic influences. A valuable deposit of kaolin is "economically injured" through depletion notwithstanding the fact that the building of a new railroad has enhanced the total value of the property. The value of the deposit itself has sustained depletion.

MINERAL RIGHTS. The property interest of one who pays a periodical rental to the owner of the property for the privilege of quarrying or exploiting a mineral deposit.

MINERAL FEE. The ownership of the mineral alone. It does not include fee title to the surface.

DEPRECIATION. Means the gradual reduction in the value of property due to physical deterioration, exhaustion, wear and tear through use in trade or business.

OBSOLESCENCE. Means the gradual reduction in the value of property due to the normal progress of the art in which the property is used, or to the property becoming inadequate to the growing needs of the trade or business. Obsolescence, a gradual lessening of value, must be distinguished from "loss of useful value," which contemplates an abrupt termination of usefulness.

LOSS OF USEFUL VALUE. Results when through some change in business conditions the usefulness of the asset is suddenly terminated. Thus, the physical equipment of a mine may lose its usefnl value through the unexpected encountering of unfavorable geologic conditions.

AMORTIZATION. Applies particularly to those facilities constructed wholly or in part to produce articles for the prosecution of the great war. For example, a cotton mill constructed under war prices or built over-size in anticipation of a long usefulness may be subject to amortization, wholly or in part. The term is also used to express the "writing off" of certain amounts over the useful life of the asset. For example, the amortization of the amount or bonus paid for a leasehold covering a definite period.

DEPLETION OR DEPRECIATION ALLOWED. Are the amounts allowed as deductions from gross income based upon the depletion or depreciation suffered during the taxable year.

DEPLETION OR DEPRECIATION SUSTAINED. Are the amounts necessarily deducted from invested capital or cost on account of depleting or depreciating the mineral deposit or physical property from date of acquisition. It is a recogniting in audit of what actually happens.

MINERALS. Comprise ores of the metals, coal, oil, gas and the various inorganic nonmetals.

ORE. The substance of a commercially significant mineral deposit formed by mineralizing agencies of some special localized character.

MINE. A commercial deposit of mineral irrespective of method of recovery.

MINERAL PROPERTY OR "PROPERTY" includes mineral deposit, plant and equipment, development, and the surface value of the land. The value of a mineral property is the sum of the values of its component parts.

MINERAL DEPOSIT OR "DEPOSIT" refers to minerals only, such as "ores only" in the case of a mine, "mineral only" in the case of an inorganic nonmetal, "oil only" in the case of an oil well, and to "gas only" in the case of a gas well.

DISCOVERY. Is not applied to extensions of known deposits or ore bodies. It may be defined not only as a discovery of a new mine or deposit not previously known to exist but the discovery of the true nature of a known deposit. The utility of a deposit may be discovered as well as its physical presence. For example, a deposit of "clay" or "dirt" may be discovered to be high grade Fuller's earth. There is no advantage in knowing that a deposit exists if ignorant of its true character.

BASIC DATE OR "SIGNIFICANT DATE" means the date of valuation such as March 1, 1913, date of acquisition, date of reorganization, or date of discovery, or within thirty days thereafter.

NET OPERATING PROFIT. Is the profit per ton or other unit derived from operations before deducting depletion, depreciation and interest on borrowed capital.

IN GENERAL

The value of a mineral deposit comprises two main elements; an intrinsic element based on the qualities of the material itself and an extrinsic element based on its availability and the nature of the demands for it. These elements may not be sharply separated and neither exists without the other. The ratio of these two elements varies according to the bulk and unit value of the material and its immobility.

PRESIDENT LORING PLEASED WITH CONGRESS CONVENTION

FOLLOWING his arrival in San Francisco after attending the Chicago convention of the American Mining Congress, President Loring in a newspaper interview expressed a favorable opinion of the results of the meeting. He outlined the important activities taken at Chicago and pointed out wherein the Mining Congress is performing an important service for the country. He said:

"The American Mining Congress was attended by members from all parts of the United States, and judging by the faithful attendance and the lively part the members took in the proceedings of the various meetings, I am sure the congress is being looked upon by its large membership as important to the mining industry of this country. Such men as Charles M. Schwab, and many other large men representing mining, attended the meetings and spoke regarding the development of the United States.

"Matters of great importance to the mining industry generally were dealt with at the various committee meetings, the helpfulness of which will be felt as time goes on.

"The McFadden gold bill is hung up pending the sanction of Secretary of the Treasury Mellon, without which we are helpless. However, the campaign for the passage of the McFadden bill was worth while, as it has advertised the gold mines of the United States in a way that could not have been done so well through any other medium.

"The Congress was a great success and will be followed by one of greater importance next year. The meeting place has not been decided for 1922.

"I was pleased with California's mineral exhibit at the congress. This would not have been possible without the assistance of State Mineralogist Fletcher Hamilton."

PROTECTING THE DYE AND CHEMICAL INDUSTRY

By F. G. Moses.

SYNTHETIC chemicals, dyes, medicines and perfumes are manufactured from four general classes of materials; coal tar, sulphur, alkalies, nitrogenous products. All of these materials can be produced cheaply in the United States, providing the necessary consumption is available.

As coal tar is one of the most important of all of these raw materials, it is evident that the coal mining industry should be very interested in the establishment of a successful synthetic chemical manufacturing business in the United States. There are several evident reasons why we should be independent of the world for these necessities of modern civilization.

For instance, there are about three billion dollars worth of finished products dependent upon the color industry alone; besides several millions of workers employed in producing these finished products. It does not seem good economics to be dependent upon Germany or any other foreign producers for such vital and important raw materials.

Everyone is well acquainted with the close relation between dyes, chemicals and the manufacture of military explosives, war gases and other constituents of modern chemical warfare. Statistics show that the great war was started on a 100 percent explosive basis but ended as a 55 percent chemical war. We hope that the war just finished is the last, but if it is not the next one will be close to a 100 percent chemical war.

If we permit our foreign competitors in the chemical and dye industry to dominate the world with these products, it will not be necessary for possible military antagonists to have either an army or navy for the reason that they can depend upon their chemical industry to furnish them with the necessary munitions for modern chemical warfare.

It was shown by one of the Congressional committees that if the Germans had had 4,000 tons of a military liquid that we were producing at the rate of 200 tons a week at the time of the armistice, and 3,000 aeroplanes to distribute this liquid, the American first army in France could have been eliminated in from eight to ten hours.

It has been the cry of a certain section of American business that, although these facts are true, all that will be necessary to save our present successful American chemical and dye business is a high tariff. It must be admitted that in the case of many manufactured products this would be true but for several economical and technical reasons such a tariff would not protect and allow for development of a dye and chemical industry in this country.

Germany, who will probably be our greatest competitor in the future on this business, has invested in this industry half a billion dollars, gold. Her industry is organized to supply the world. For military reasons, England, France, Italy and Japan have enacted embargoes prohibiting the importation of dyes and chemicals to their respective countries. This means that the organized monopoly of Germany must depend upon the business of the United States and the Orient to absorb their enormous production of these products.

Even before the war was over, the Germans realized this and in January, 1916, entered a fifty year agreement establishing uniform working conditions, uniform hours of labor, uniform wages, agreed to exchange patents and trade secrets and to divide the business of the world among them on a pro rata basis. This was probably her first move in the "war after the war."

These facts give some idea of the necessity for Germany dominating the chemical and dye business in the only large country which has not prohibited the importation of dyes and chemicals.

Speaking of dyes alone, there were only about 30,000 tons consumed in the United States per year. The Tariff Commission shows that the average value of these dyes is approximately $1.00 a pound. With a 300 per cent ad valorem duty on these products, which, by the way, due to foreign exchange, is only 100 percent, they could "jump the tariff wall" and practically give away all the dyes consumed by American industries in a year at something like fifty million dollars, or 10 percent of their capital investment.

They would not have to spend anything like this amount of money, however. All that would be necessary for them to do is to pick out the few dyes and chemicals on which the present American producers are making money at the present time and carry out the same plans. Say a million pounds of these dyes were selected for elimination, they could afford to pay a 500 percent American tariff and give away these dyes and chemicals for a year at a cost of approximately 1 percent of their capital investment. This, of course, would be good business and in the desperate straits in which the chemical industry is as a result of embargoes in other countries, they would, undoubtedly, do this.

For technical reasons, in the manufacture of many products, it would be really impossible to put a tariff on many of the impostant finished products. Take for instance, the case of Indigo, one of the most important of these products. Say a prohibitive tariff of 500 or 1,000 percent ad valorem had been passed against this particular product. Indigo is a result of, say, ten distinct manufacturing operations. At the end of the ninth operation, we obtain a product known as Indoxyl. Indoxyl is an entirely different substance than Indigo and no one could, by any means, prove that they are the same product However, ton convert Indoxyl into Indigo, it is only necessary to place the former substance in a vat and blow air through it, causing the Indoxyl to be converted into Indigo. In this case, it would only be necessary for the Germans to import Indoxyl into the United States as such and blow the air through it in this country. To protect the Indigo any sort of tariff would be useless against such a manipulation of this sort.

Some of the best business brains in the United States, including the army and navy departments, have given much thought to this problem with a result that they have decided that, apparently, the only salvation for our 200 or more plants in operation in this country at the present time and our military independence is by means of a licensing embargo. This embargo is simple, practical of application and would, undoubtedly, obtain the results that most everyone agrees are necessary.

The principal argument against the licensing embargo is that it will enable capitalistic monopolies to control the business. A careful reading of the embargo section can disprove this fact. The section states definitely "that none of these materials shall be imported, except that it is shown that the materials are not produced in this country in satisfactory quality, quantity or at satisfactory prices."

It would seem in view of these facts that public sentiment should, after understanding the facts of the matter, be brought to bear in such a way as to show the legislative forces of our country that the American public demands that the necessary steps be taken to protect our recent chemical industry from foreign dominance, even though this protection involves a radical departure from previos legislation.

ARIZONA CHAPTER DEVOTES MEETING TO TAX PROBLEMS

A MAJORITY of the mining men of the state attended a recent meeting of the Arizona Chapter of the American Mining Congress, held at Jerome, when the increase in taxation made during recent years was discussed. Among the speakers were Robert E. Tally of the United Verde Mining Company, Harry Fennemore of Phoenix and W. S. Boyd, the latter reading a paper prepared by L. S. Cates.

Mr. Fennemore stated that he intended to cover the general field of taxation without special reference to the mines, as the problems of all the taxpayers of the state are substantially similar and what affects the farmer, the business man and the cattleman, affects also and in equal measure, the mine operators.

"The tax problem in Arizona is rapidly becoming acute and many tax conditions imperatively demand an immediate remedy," he said. "The title given my address is somewhat misleading, as I do not propose to discuss mine problems alone, and I believe that the difficulties confronting the metal producers, although perhaps more technical and more complicated so far as the method of imposing taxes is concerned, do not differ in kind from those which confront the other basic industries of the state."

After a brief reference to the theoretical valuation of property in Arizona at its full cash value and a statement and that this ideal had not been reached by any manner of means, some kinds of property being grossly over-assessed and others escaping their fair share of the general burden, Mr. Fennemore called attention to the fact that all state and county taxes have risen to an incredible height and that such taxes, if continued for a few more years at the same rate of increase, will spell nothing less than complete confiscation within two decades.

According to some reports of the meeting, Mr. Fennemore made his auditors gasp when he presented figures proving that county tax rates have risen from 50 percent, in some counties, to 900 percent in others and that the average for the entire state is a 600 percent increase.

Following the delivery of Fennemore's address, W. S. Boyd read a paper on the same topic, prepared by L. S. Cates, who was called east on business and could not attend the meeting.

There was an almost uncanny similarity in the figures adduced by Mr. Cates and those presented by the Phoenix tax expert.

The general manager of the Utah Copper company made his chief point that while the population has increased but 62 percent in ten years and the assessed valuation of property has increased 800 percent in the same period, the actual levies for taxation have increased more than 70 percent in the face of the greater valuations —an increase out of all reasonable proportion.

He cited the fact that New Mexico, with a population greater by 27,000 than that of Arizona, has a tax rate of $3.51 per $100 valuation as against a levy of $15.28 in this state.

Like Mr. Fennemore, Mr. Cates absolved Governor Campbell from responsibility for the excessive burdens. He showed that there has been a positive reduction in the administrative expenses of the state and that the average distribution of each dollar of taxes is 12 cents for municipal purposes, 26 cents for state purposes and 61 cents for county levies.

Robert Tally, commenting on the Fennemore and Cates papers, declared both had hit the nail squarely on the head and that the facts presented warranted immediate action by every taxpayer in the state. He said that Governor Campbell is aware of the bad conditions existing and that further substantial reductions in state expenditures may be looked for, the governor being determined to effect such savings, even if it becomes necessary to call a special session of the legislature.

ARIZONA DIRECTORS SEEK LOWER FREIGHT RATES

DIRECTORS of the Arizona Chapter of the American Mining Congress, at a meeting held in Jerome, adopted two resolutions demanding reduced freight rates. Such reduction, they held, constituted a condition precedent to the resumption of large-scale mining operations. The resolutions follow:

WHEREAS, The resumption of mining copper depends upon the sale of the product at a profit, and,

WHEREAS, The large items of expense in cost of production and marketing are freight charges on mining machinery, material and supplies, freight on ores to smelters and copper bullion to refineries, now therefore, be it

RESOLVED, That this Congress notify the carriers serving the mining industries of this state that before it will be possible for the mining companies to resume operations it is imperative that the cost of transportation be materially modified.

WHEREAS, A grave situation faces the mining industry from all angles, in that the present selling price of copper is 4 cents per pound less than the average selling price based upon ten years previous to the great war; that practically every cost attached to the mining industry has risen to a height entirely inconsistent with pre-war conditions; that the burden of taxation within the state of Arizona has become so heavy by reason of the tremendous expenditures being made for public purposes, and resulting in the net cost for taxation alone of 1.7 cents upon every pound produced; and

WHEREAS, if the present burden of taxation is maintained or is increased, as seems to be the prospect now before us, there is grave danger that this factor of itself will prevent or greatly delay the resumption of mining operations, even under more favorable industrial conditions than are now present; now therefore be it

RESOLVED, That efforts shall be made by those interested in the mining industry to bring before the tax-payers of the state the serious problems now confronting the state, and endeavoring in every way to influence all the boards or other officers having jurisdiction in the matter of public expense toward cutting down public expenditures and conserving the money of the taxpayers, to the end that the present excessive rates shall be promptly and materially reduced, and that the present burden of taxation shall be lightened upon every class of property in the state.

RESCUE STANDARDIZATION COMMITTEES ARE NAMED

INITIATION of a program for definite, practical work seeking to establish international standards governing use of mine-rescue apparatus is marked by the announcement by the Bureau of Mines of the tentative sub-committees of the Mine Rescue Standardization Committee.

Sub-Committee No. 1, on international mine-rescue standards, will act as a liaison committee to representatives of other countries than the United States. Lieut. Col. J. A. S. Ritson, inspector of mines of Great Britain, has been appointed chairman of this committee. Robert

Strachan, senior inspector of mines of British Columbia, is the Canadian representative. J. W. Paul, chief of coal mine investigations of the United States Bureau of Mines, Pittsburgh, Pa., is secretary. Representatives from Belgium and France will be named later.

Sub-Committee No. 2 will deal with rescue-apparatus requirements and tests for permissibility. D. J. Parker, chief of the division of mine-rescue cars and stations of the Bureau of Mines, has been named chairman.

Sub-Committee No. 3 will take up the subject of physiological effects in use of mine-rescue apparatus and methods for detection of dangerous gases. Dr. R. R. Sayers, chief surgeon of the Bureau of Mines, is named as chairman. Other members of this committee are Dr. A. F. Knoefel, Terre Haute, Ind., Dr. Yandell Henderson, Yale University, New Haven, Conn., and A. C. Fieldner, superintendent, Pittsburgh Experiment Station of the Bureau of Mines.

Sub-Committee No. 4 will consider the matter of regulations for use of mine-rescue apparatus in coal mines. Robert M. Medill, director, Department of Mines and Minerals of the State of Illinois, Springfield, Ill., is chairman, and C. A. Herbert, district mining engineer of the Bureau of Mines, Vincennes, Ind., secretary. Members of this sub-committee who will study the matter of regulations for use of apparatus in mines having flat coal beds are E. H. Denny, mine safety engineer of the Bureau of Mines, and Robert Lilly of West Virginia. Regulations for use of apparatus in pitching coal beds will be taken up by J. J. Forbes, mining engineer of the Bureau of Mines, Birmingham, Ala., and J. J. Corey, Coos Bay, Oregon.

Sub-Committee No. 5 will deal with regulations for use of mine-rescue apparatus in metal mines. D. Harrington, mining engineer of the Bureau of Mines, Denver, Colo., will act as chairman. H. J. Rahilly, mining engineer, Anaconda Copper Mining Co., Butte, Mont., will also serve on this committee.

Additional names may be added to all sub-committees as occasion may require.

REFINERY STATISTICS FOR FIRST NINE MONTHS OF YEAR COMPARED

LOSSES were registered in the production, domestic consumption and exportation of kerosene during the first nine months of 1921, as compared with the same period of 1920. Losses were also noted in the case of gas and fuel oil. There was an increase in the production and domestic consumption of gasoline, with a decrease in exportation, and a decrease in the production, exportation and domestic consumption of lubricating oils.

The following table, prepared by H. F. Mason, petroleum technologist of the Bureau of Mines, shows the percentage of increase or decrease for the first nine months of 1921 as compared with the first nine months of 1920.

	Gasoline	Kerosene	Gas & Fuel Oil	Lubricating Oil
Production....	+10%	−16%	+13%	−17%
Imports.......	−17%	......	......	......
Exports.......	−15%	−14%	+18%	−35%
Shipments to insular poss.	+33%	+21%	+19%	−01%
Domestic consumption....	+06%	−12%	+04%	−21%

COLORADO RIVER DEVELOPMENT TO BE CONSIDERED AT MEETING

FIVE representatives of the American Mining Congress have been appointed to attend a conference on the development of the resources of the Colorado River, to be held at Riverside, California, December 8, 9 and 10. They are President W. J. Loring; Bulkeley Wells, Denver; R. S. Billings, Kingman, Ariz.; George Dern, Salt Lake City, and Governor Emmet D. Boyle of Nevada.

Practically all of the governors of the eight southwestern states will be in attendance, and likewise representatives of the six thousand commercial organizations of Arizona, California, Colorado, Nevada, New Mexico, Oklahoma, Texas and Utah. Secretary Fall of the Department of the Interior and Director Arthur P. Davis of the United States Reclamation Service will be in attendance and President Harding and President Obregon of Mexico and the Governors of Sonora and Lower California will send personal representatives. There will likewise be strong delegations from the Mississippi Valley and Great Lakes regions.

Governor Thomas E. Campbell of Arizona is President of the Colorado River Development Association which has called the meeting. This organization is waging a fight for the development of the Colorado River power and irrigation resources, whose 1,800-mile course forms the spinal column of the southwest. The estimated development of this river will generate between 20,000,000 and 30,000,000 horse power of electrical energy and make approximately 15,000,000 acres of desert land fertile, opening an agricultural and industrial empire capable of sustaining an additional population of not less than 50,000,000 people.

Marshal Foch will be the guest of the convention on its opening day. Concurrent with this meeting will be the initial session of the Interstate Colorado River Commission recently created by act of Congress, upon which each state in the southwest has appointed one representative.

While Secretary Fall has tentatively announced that he will hold the session at San Diego about the same time, it is believed that he will hold his Colorado River hearing concurrently at Riverside, since it concerns the identical subject and will virtually duplicate the purpose of his hearing on a much larger and more comprehensive scale.

All the southwest has appealed to him to combine his hearing in order to save those at interest time and expense.

REDUCTION MILLS CATALOGUED

A LIST of reduction mills in the various western states has been compiled by Chas. G. Yale, V. C. Heikes and Chas. W. Henderson of the United States Geological Survey, and is being published by the United States Bureau of Mines for the benefit of the mining industry. The list supplements and brings up-to-date the report of an investigation made in 1912. The figures of daily capacity include those of the trade milling, tailings, cyanide, flotation and smelting plants. Lists for the following states have been bound separately: California, Oregon, Washington, Idaho, Utah, Montana, Nevada, Arizona. Lists for other western states will be published soon. Copies may be obtained by writing to the Bureau of Mines, Washington, or to the American Mining Congress.

COMMERCE DEPARTMENT MAKING COAL STOCK SURVEY

A COAL SURVEY will be made by the Department of Commerce during the next sixty days. The object is to determine the extent of coal stocks in the hands of consumers and the actual facts as regards coal wages. The purpose of securing the latter information is to form, if possible, a basis for arriving at a new wage scale to be effective when the present one expires April 1, and thereby to prevent a strike.

Questionnaires have been sent to wholesalers and retailers. A statement accompanying each questionnaire carried the following explanatory data:

"Many consumers of bituminous coal throughout the country will receive a questionnaire from the government at Washington inquiring as to their stocks of coal on November 1.

"The purpose of the questionnaire is to find out how much coal is on hand as the country enters the winter, in order that consumers and producers alike may make intelligent plans. Soft coal production up to October 1 was 112,000,000 tons behind last year and from 75,000,000 to 90,000,000 tons behind normal.

"The decrease is in part to be expected, because of a decline in consumption and in exports and it does not necessarily mean that consumers are unwisely burning up their reserves.

"But if there is any possibility that the above-ground reserves are below the safety line, the best way to settle the point, the government thinks, is to take account of stock and lay all the facts before the public.

"The information is also desirable to the public in view of the disturbance to the coal trade that may eventuate with the renewal of the coal miners' biennial working agreement at the end of March.

"It is hoped to complete the canvass and publish a preliminary report within 30 days."

It is known that the Department of Commerce is working to prevent a strike of coal mine workmen next April. The information now being sought and which will be embodied in the conclusions of the survey now being made will be the only information of its particular kind, and it is believed that it will be of great service in this connection. The department has asked for an appropriation of $40,000 to defray expenses of services it expects to be called upon to render in connection with the forthcoming adjustment of the bituminous scale.

WORLD'S COAL AND OIL STAKE AT ARMAMENT CONFERENCE

ALTHOUGH the oil question seems to be overshadowing the international coal situation in the minds of members of the American delegation to the arms conference, there are indications which lead to the conclusion that the coal deposits of Siberia, China and Japan will eventually come to occupy a prominent place in Far East discussions. The American Advisory Committee apparently has not asked government agencies for so thorough a compilation of coal data as it has requested of them in connection with the international oil situation. It has been definitely ascertained that the Bureau of Foreign and Domestic Commerce has not yet received such a request, although other agencies of the government are understood to have made studies of the situation, which would indicate that reports are to be submitted to the committee in at least a semi-official manner.

Close students of the situation are of the opinion that the importance of the coal deposits of western Asia as a factor in the international situation of the Far East is being clouded by the manner in which oil has recently been brought to the point where it is generally looked upon as the prime key commodity.

Japanese oil interests intend to demand participation in the fields of Netherlands East Indies on an equality with other non-Dutch capital, according to reports to the Commerce Department, which place the total production of these fields in 1920 at 2,365,320 tons. It is reported that the Koloniale Petroleum Mij., a subsidiary of the Standard Oil Co., has been granted only two of the 6,000 prospecting licenses for which it made application of the Netherlands East Indies Government.

ALASKA PROFITS FROM NATIONAL EXPOSITION OF MINES

BENEFITS of the national exposition of mines, held contemporaneously with the twenty-fourth annual convention of the American Mining Congress, were pointed out in a letter received by the Mining Congress from J. L. McPherson, manager of the Alaska Bureau of the Seattle Chamber of Commerce. The Alaska Bureau co-operated with the legislature of Alaska in sending the exhibit to Chicago, and Mr. McPherson attended personally. Upon his return from Chicago, he wrote the American Mining Congress in part as follows:

"I wish to take this opportunity of again extending my congratulations on the splendid exposition at Chicago. I do not believe there is any work that will be so beneficial to the mining industry as this yearly display of our great mineral resources and the means and methods of making them available.

"You may be assured of our hearty support in securing a larger and better exhibit for Alaska at your exposition next year. I hope it may be possible to develop an exhibit of placer mining in miniature, illustrative of all methods. It would, I believe, prove of the greatest interest."

EXPOSITION ATTRACTION TO BE SHOWN IN OTHER PLACES

UTAH'S EXHIBIT at the twenty-fourth annual convention of the American Mining Congress is considered so high class and so representative that it will be preserved in its entirety. The Salt Lake Commercial Club has made the announcement that it will be shown at state fairs and perhaps also as other expositions in the future.

The Salt Lake Commercial Club is taking the lead in a movement for advertising Utah's mineral resources. It has recently issued a booklet entitled, "Utah's Mineral Wealth." It maintains a standing committee on mining. This committee is planning meetings to be held at frequent intervals in the future. Mining operators, as well as engineers and others especially interested in the industry, will be invited to deliver addresses, and the meetings will be open to the public.

The exhibit which attacted so much attention at Chicago will be kept in the Utah state capitol when not in use at fairs and other expositions.

OIL AND METAL MARKETS AFFECTED BY CONFERENCE RESULTS

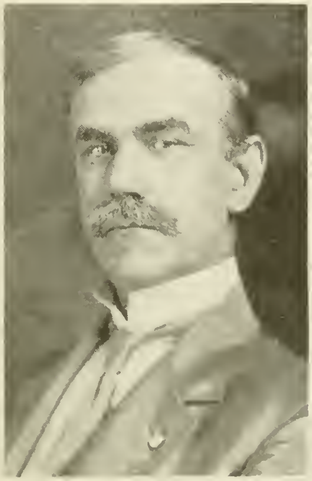
REDUCTION in the fleets of the powerful nations will entail a diminution of fuel oil consumption, and in the opinion of some of the experts attending the Washington conference market prices of petroleum would be affected. In 1920 the American navy consumed 8,000,000 barrels of fuel oil, or about three weeks' output of the domestic refineries.

The Thread of the Fabric

I. Senator Reed Smoot

A Series of Scrutinies Directed Toward Notable Legislative Personalities

By IRA L. SMITH



SENATOR REED SMOOT

As THE SPECIAL SESSION of Congress tumbled into its grave, Reed Smoot, the senior senator from Utah, probably was convinced that it is next to impossible to teach new tricks to a flock of old legislative dogs. The Senator made a brave effort during the summer to get them to jump through the sales tax hoop; but they were afraid to lift their feet from well-known political grounds.

Now that the smoke created by the tax bill battle has cleared away, it is worth a minute or two to unleash the dogs of analysis, turning them upon the brain that proposed the repeal of practically every existing national tax law.

It took the Smootian head to rig up such a plan for sending the old on its giddy way and supplanting it with a revenue plan that is new, so far as actual use is concerned, although somewhat worn from lying around the shop. Scarce another legislative think-tank would have been more ideally adapted to the job; not because the brain that sits atop the Senator's tall frame grinds out other than conservative thoughts, but for the simple reason that only a slave to detail and one who kowtows eternally before the altar of the statistical god could build the basis for such a proposal and be able to defend it.

Coming into the Senate astride a tussle, Mr. Smoot has been right in the center of the legislative dough mixing for many years. Arriving on Capitol Hill with not a great deal of inherited political power, he has set up a house unto himself that makes many an opponent's eye roll in fine envy.

He is almost as abrupt as the end of a road. This trait at times threatens to sue for divorce from the type of easy-going understanding that one glimpses in the law-making sphere. But old Dame Nature has compensated everything: she has seen to it that the person with a snappy mind that chops things off short and throws them away, is, in the very process of the chopping, given an alertness that always has its head up and its eyes open.

In the committee room, the witness who sees Mr. Smoot seated at the table, carnivorous for details, may safely write home to the folks that he has a funny feeling. For the dynamo that walked out of the west is certain to launch an upsetting quiz just when the testimony is flowing smoothly as book-agent's gab. You can't put anything over Mr. Detail.

One can hardly conceive Mr. Smoot in the role of getting familiar. Although he is characterized as one of the "old guard", he seems to exude that precise sort of thing that keeps you from calling your boarding house lady by her first name. To cite a contrast, I listened to a pair of "progressives" jump all over each other at a Senate committee hearing one day, only to hear one of them say to the other, after adjournment, "Bob, give me a helping of tobacco."

Reed Smoot tried to pull an oar with his sales tax plan. Sitting in midships as ballast, he had carefully gathered details, waiting for his chance to land high and handsome atop a successful scheme.

His presentation was strikingly clear, being so simple that even women and children might understand. A one-syllable tax plan, one might say.

But thoughts that are carefully laid out on the bottom of the boat cannot be watched so closely when the wielding of an oar, or application of any sort of driving force, steals attention from the methodical marshaling of facts.

If Mr. Smoot could learn from a vaudeville juggler the trick of mechanical movement; if he could keep his eyes from holding hands with his thoughts; if his analytic brain pan could digest the unexpected as well as it does the things which have been well-masticated mentally; if the senior Senator from Utah could do these things he would stand ace high. To quote my friend, Sadie, the ribbon counter girl, "He'd knock them cold."

TARIFF and taxation, the two paramount issues before Congress, both of vital importance to the mining industry, have been the chief subjects of discussion at the Capitol.

The Senate on November 8 passed the Revenue Bill and conferees were appointed by the House and Senate to consider Senate amendments to the House bill. There were over 800 Senate amendments to adjust. The conferees completed the adjustment of the Senate amendments in sufficient time for the passage of the bill before adjournment and the bill has been signed by the President. The important changes made in the House bill by the Senate include an increase of the corporation tax to 15 percent; reduction of the minimum surtax rate to 50 percent; repeal of excess profits and transportation taxes effective January 1, next. In the final debate the Senate rejected a 3 percent sales tax by Senator Smoot. It adopted an amendment by Senator Lenroot, Wisconsin, providing that net gain on sale of stock of corporations shall be taxed at the full income normal and surtax rates. Reversing its former action, the Senate eliminated the tax of \$2 per \$1,000 on the fair value of capital stock in excess of three million dollars, leaving a flat rate of \$1 per \$1,000. The Lodge amendment, previously agreed, permitting holding companies, in computing their capital stock subject to tax, to deduct the value of capital stock owned in subsidiary companies, was also stricken out. The purpose of the Lodge Amendment was to prevent double taxation and by its elimination, holding companies will be liable to tax on the full value of their capital stock, even though such value represents holdings in subsidiary companies which are also required to pay the tax. An amendment by Senator Walsh, Mass., was adopted, imposing a tax of 1% on gifts valued between \$20,000 and \$50,000, with graduated rates up to 25% on gifts in excess of ten million dollars.

The Senate passed the Emergency Tariff Bill which provides that the Emergency Tariff act remain in force until otherwise provided for by law and continue in effect until the permanent tariff bill is enacted. Previously the Emergency Tariff would expire November 27.

An amendment to the Tax Bill adopted by the Senate is that exempting gold mining companies from excess profits tax in 1917. Gold mining properties were exempted under the 1918 law but not included in the 1917 law. This amendment was finally adopted and included in the Revenue measure, and a considerable number of gold mining companies will be entitled to refund from the Bureau of Internal Revenue.

The War Minerals Relief Bill which has been before Congress for some time passed the House by a vote of 177 to 137. The bill which the House passed on November 16, is the Shortridge measure which has been reviewed previously in the Mining Congress Journal. The bill was amended on the floor to include claims, notice of which had been made in writing and the legislation is aimed to give the Secretary of the Interior authority to review all cases of dissatisfied claimants. Conferees were appointed in the House and Senate and the conference report was adopted before the adjournment of the present session and the bill has been signed by the President.

Senator Shields of Tennessee, introduced an amendment to the Tariff Bill, proposing a duty on potash for five years graded down from 2½ cents per pound the first two years; 2 cents per pound the third year; 1½ cents per pound the fourth year; one cent per pound the fifth year and thereafter free of duty.

The Senate has passed a bill authorizing the leasing for mining purposes of unallotted lands on the Fort Peck and Black Feet Indian Reservations in Montana. It also has passed a bill appropriating four million dollars for the completion of the Alaska Railroad System between Seward and Fairbanks.

The Senate Finance Committee has again resumed hearings on the Tariff Bill. It is understood that already more than 400 requests for hearings on tariff revision are pending before this committee. The committee is now hearing wool and agricultural interests and will later hear representatives on all of the remaining schedules and will not bar additional data on schedules already heard.

Speaker Gillette of the House introduced a bill designed to prevent railroad strikes and to reduce railroad rates. It proposes a joint capital and labor partnership in the operation of railroads and joint earnings to be divided equally between the two parties. The bill proposes that the Interstate Commerce Commission shall lower rates on coal, lumber, building materials, foreign products, and other necessaries, so that producers may reach markets at reasonable rates.

Representative Mondell favored an amendment of the law to permit land owners to allow prospectors to inspect the land for mineral content. He pointed out that a prospector might believe there was coal or oil on the land but would not care to go to the trouble of obtaining a permit but would prefer making an arrangement with the owner.

The legislation to prevent discharge of oil and other waste in navigable waters, known as the Pollution Bill, which is before the House Committee on Rivers and Harbors, will resume hearings December 7. Representative Appleby of New Jersey has introduced a resolution in this connection, requesting the President to call a conference of leading nations to consider amendments to the maritime laws to control pollution of navigable waters by coal burning and oil carrying steamers.

The Frelinghuysen Coal Stabilization Bill came up in the Senate on November 9, when that body was considering legislation under the calendar Wednesday rule, but its consideration was deferred on objection of Senator Sutherland of West Virginia.

Senator King of Utah has introduced a bill transferring national forests from the Agriculture Department to the Interior Department.

The following bills of importance to the mining industry have been introduced:

REVENUE

S. 2687. Introduced by Mr. Pomerene (Court of Appeals). The bill authorizes the creation of a United States Court of Internal Revenue Appeals, which shall consist of a judge and four associate judges, each to be appointed by the President. This court is to be a court of record and is to exercise such powers, to establish all rules and regulations for the conduct of the business of the court. It shall have the power to review any decision or matter within its jurisdiction, and may affirm, modify, or reverse the same, and remand the case with such orders as may seem to it proper. It shall exercise exclusive appellate jurisdiction to review by appeals, final decisions by the Commissioner of

IMPORTANT BILLS REVIEWED IN THIS ISSUE

REVENUE:
- **S. 2687: Mr. Pomerene (Creation Court of Internal Revenue Appeals.)**
- **S. J. Res. 136: Mr. King (Conference to consider questions relative Federal and State taxation.)**
- **H. R. 8245: Mr. Smoot (Amendment Revenue Act, capital stock.)**
- **H. R. 8245: Mr. Frelinghuysen (Amendment Revenue Act, 1918)**

ANTI TRUST:
- **S. 2715: Mr. Watson (Amending existing laws against unlawful restraints and monopolies)**

TARIFF: (Potash)
- **H. R. 7456: Mr. Shields (Amending Fordney Bill)**

WAR MINERALS:
- **S. 843: Mr. Shortridge (Amending War Minerals Relief)**

ALASKA:
- **H. R. 8142: (Amendment Alaskan Railway Bill)**

DECIMAL SYSTEM:
- **S. 2611: Mr. King (Establishment standard decimal system)**

RAILROADS:
- **H. R. 8331: Mr. La Follette (Amending Transportation Act)**

MISCELLANEOUS:
- **S. 2655: Mr. King (To permit the location of mining claims within national parks)**

Internal Revenue or the Secretary of the Treasury in all cases as to the construction of the law and the facts respecting the assessment and collection of the internal revenues; all appealable questions as to the jurisdiction of the Commissioner and the Secretary of the Treasury as to the laws and regulations governing the collection of internal revenue. The judgment and decrees of this court shall be final in all such cases with the exception that in any case in which the judgment or decree of the court is made final by the provisions of the bill, it shall be competent for the Supreme Court, upon the petition of either party filed within sixty days after the issue by the Court of Internal Revenue Appeals of its mandate upon decision in any case in which there is drawn in question the construction of the Constitution of the United States, or in any case when the Attorney General of the United States shall have filed with the court a certificate to the effect that the case is of such importance as to render expedient its review by the Supreme Court such case to be certified to the Supreme Court for review and determination. Section 9 provides that after the organization of this court no appeal shall be taken or allowed from the Commissioner of Internal Revenue or the Secretary of the Treasury to any other court.

H. R. 8245. Proposed by Mr. Smoot (Capital Stock). This bill amends the Revenue Act by proposing that such amendments be made as will permit a tax of 10 percent of the excess amount in the case of any corporation, the net income of which for the taxable year is less than 8 percent of the fair average value of its capital stock for the year ending on June 30. The bill strikes out on page 167, beginning with line 20, to and including page 175, and provides under Title IX a new section to be a business sales tax, which provides that in addition, to all other taxes there shall be levied upon every person carrying on a business involving the sale of any goods, wares, or merchandise, manufactured or purchased by such person for sale, a tax equal to one-half of one percent of the amount by which the gross sales of such goods exceed the sum of $6,000 in any calendar year. The production of coal, fuel oil, and other minerals shall constitute manfacture under this act. Where the full amount of $6,000 yearly is not claimed in computing the tax due, the part not so claimed shall be deducted in computing the tax due for any succeeding month until the total exemption for any calendar year shall equal $6,000.

S. J. Res. 136. Introduced by Mr. King; referred to the Committee on Finance. The resolution authorizes the President to invite the governments of the several States of the Union to appoint representatives to confer with representatives to be appointed by the President, to consider the relation between Federal and State Taxation; co-operation between Congress and the States in the laying and levying of taxes; the matter of duplicating and conflicting Federal and State taxes upon inheritances, successions, and incomes, and means for the accommodation of such conflicts; and the question of the allocation and distribution of the revenues derived from inheritance taxes as between the Federal Government and the several States. Section 2 of the resolution appropriates the sum of $20,000 to defray the expenses of such conference.

H. R. 8245. The following is intended to be a proposed amendment by Mr. Frelinghuysen: On page 78, after line 20, insert a new section to read as follows: Sec. 229. That in the case of the organization as a corporation within four months from the passage of this act of any trade or business in which capital is a material income-producing factor, and which was previously owned by a partnership or individual, the net income of such trade or business from January 1, 1921, to the date of such organization may at the option of the individual or partnership be taxed as the net income of a corporation is taxed under Titles II and III; in which event the net income and invested capital of such trade or business shall be computed as if such corporation had been in existence on and after January 1, 1921, and the undistributed profits or earnings of such trade or business shall not be subject to the surtaxes imposed in section 211, but amounts distributed on and after January 1, 1921, from the earnings or profits of such trade or business accumulated after December 31, 1920, shall be taxed to the recipients as dividends; and all the provisions of Titles II and III relating to corporations shall so far as practicable apply to such trade or business: Provided, that this paragraph shall not apply to any trade or business, the net income of which for the taxable year 1921 was less than 20 percent of its invested capital for such year: Provided further, that any taxpayer who takes advantage of this paragraph shall pay the tax imposed by section 1,000 of the Revenue Act of 1918 as if such taxpayer had been a corporation on and after January 1, 1921.

ANTI TRUST

S. 2715. Introduced by Mr. Watson. This bill amends the Anti-Trust Law by providing that after two years from the approval of the act no common carrier engaged in commerce shall have any dealings in securities with another corporation, firm, partnership, etc., when the carrier shall have upon its board of directors or as its president, manager, or as its purchasing or selling officer, any person who is at the same time a director, manager, etc., or who has any substantial interest in, such other corporation, etc., unless and except such dealings shall be with the bidder whose bid is the most favorable to such common carrier, to be ascertained by competitive bidding under regulations to be prescribed by rule or other wise by the Interstate Commerce Commission. Any person who directly or indirectly attempts to do anything to prevent anyone from bidding or shall do any act to prevent free and fair competition among the bidders shall be punished as prescribed in this section in the case of an officer or director. It is further provided that any one having such transaction shall within thirty days after making the same file with the Interstate Commerce Commission a full and detailed statement of the transaction showing the manner of the competitive bidding, who were the bidders, and the names and addresses of the directors and officers of the corporations and the members of the firm or partnership bidding; and whenever the commission shall, after investigation, have reason to believe that the law has been violated in and about the said transactions it shall transmit all papers and documents and its own views or findings regarding the transaction to the Attorney General. A fine of $25,000 is imposed upon anyone violating this section and every director, agent, etc., who shall have knowingly voted for or directed the act constituting such violation or who shall have aided or abetted in such violation shall be deemed guilty of a misdemeanor and shall be fined not exceeding $5,000 or confined in jail not exceeding one year, or both, in the discretion of the court. Mr. Crowther has introduced a bill similar to the above under the House number 8958.

TARIFF (Potash)

H. R. 7456. The following is an amendment by Mr. Shields to the Fordney Tariff Bill, which provides that for a period of five years beginning on the day following the passage of this act there shall be levied, collected, and paid on the actual potash (potassium oxide) content of all the foregoing, a duty of 2½ cents per pound for the first two years; 2 cents per pound for the third year; 1½ cents per pound for the fourth year; and 1 cent per pound for the fifth year: Provided further, that thereafter the said potash content shall be free of duty.

WAR MINERALS

The House amended the Shortridge Bill, S. 843, which provides for the relief in the case of war minerals producers by providing that section 5 of the act approved March 2, 1919, entitled "An Act to provide relief in cases of contracts connected with the prosecution of the war, and for other purposes," be amended as follows: Add to the first paragraph of section 5 the following proviso: Provided, that all claimants who, in response to any personal, written, or published request, demand, solicitation, or appeal from any of the Government agencies mentioned in the act, in good faith expended money in producing or preparing to produce any of the ores or minerals named therein and have heretofore mailed or filed their claims or notice in writing thereof within the time and in the manner prescribed by the act, if the proof in support of said claims clearly shows them to be based upon action taken in response to such request, demand, solicitation or appeal, shall be reimbursed such net losses as they may have incurred and are in justice and equity entitled to from the appropriation in the act. If in claims passed upon under the act awards have been denied or made on rulings contrary to the provisions of this amendment, or through miscalculation, the Secretary of the Interior may award proper amounts or additional amounts, which shall be paid from the unexpended portion of the appropriation carried in the act. This bill as amended passed the House November 16. It had previously passed the Senate on June 17. It has now gone to conference.

ALASKA

H. R. 8442. This bill is an amendment to the Alaskan Railway Bill and provides that in order to complete the construction and equipment of the railroad between Seward and Fairbanks, together with necessary sidings, spurs, and lateral branches, there is authorized to be appropriated, in addition to all sums heretofore appropriated therefor, the sum of $4,000,000, to be immediately and continuously available until expended.

DECIMAL SYSTEM

S. 2614. Introduced by Mr. King; referred to the Committee on Manufactures. The bill provides for the establishment of a standard decimal system of weights and measures. It is similar to other bills introduced for this purpose which have heretofore been reviewed.

RAILROADS

H. R. 8331. The following is an amendment which Mr. La Follette intends to propose to the Transportation Act of 1920: That no order of the Interstate Commerce Commission, heretofore or hereafter made, requiring, or purporting to require, any carrier to establish, put in force, or maintain any rate, fare charge, or classification applicable to the transportation of passengers or property between points wholly within one State shall be of any force or effect whatsoever so far as respects such transportation: Provided, that traffic which does not pass beyond the border of the State within which it originates shall be conclusively deemed to be wholly within that State within the meaning of this section.

MISCELLANEOUS

S. 2655. Introduced by Mr. King; referred to the Committee on Public Lands and Surveys. (To permit the location of mining claims within national parks). The bill provides that hereafter all public lands within a national park of the United States shall be open, under such regulations as the Secretary of the Interior may prescribe, to the location of mining claims and the working of the same, in the same manner and subject to the same conditions provided by law for the location of mining claims and the working of the same within the Crater Lake National Park, established by the act entitled "An act reserving from the public lands in the State of Oregon, as a public Park for the benefit of the people of the United States, and for the protection and preservation of the game, fish, timber, and all other natural objects therein, a tract of land herein described, and so forth," approved May 2, 1902, as amended.

BUREAU OF MINES INVESTIGATIONS

A STUDY of the heat treatment of cast non-ferrous alloys will be made at the Pittsburgh station. The annealing of cast non-ferrous alloys for the release of casting strains and the improvement of physical properties with special reference to aluminum will be conducted. The work will be under a co-operative agreement with a commercial firm, and will be under the supervision of R. J. Anderson, metallurgist of the Bureau of Mines.

At the Northwest Experiment Station an investigation is to be undertaken regarding the preparation of super-refractories by melting and treating clays in the electric furnace and preparing from these products refractory materials, chiefly brick. This work will be in co-operation with the University of Washington, and will be conducted by C. E. Williams, superintendent of the Northwest Experiment Station, C. E. Sims, electrometallurgist, and Hewitt Wilson, ceramist, of the Bureau of Mines staff, and A. Lee Bennett, fellow of the University of Washington.

The Columbus station, known as the Ceramic Station, has practically completed its investigation of the white clays east of the Mississippi River. The study thus far indicates that there are comparatively few high grade clays in Ohio, and that these few come from three different districts, namely, the Dover, Moxahala and Sciotoville. The results also indicate that none of the clay samples tested were similar to English china clay. During the clay testing work a new mercury volumeter and an oxygen-acetylene high-temperature furnace were developed.

An investigation of the electrothermic smelting of zinc and the condensation of zinc vapor is being made by the Mississippi Valley station, Rolla, Mo., in co-operation with the Missouri School of Mines and Metallurgy. Another investigation is to be undertaken at Rolla and will have for its purpose the determination of whether the zinc ores of Hancock County, Tenn., are possible of concentration. This investigation will be made in co-operation with the Tennessee Geological Survey. George J. Salmon and Will H. Coghill, metallurgists of the Bureau of Mines will be assisted by three Tennessee scientists, M. H. Thornberry, state research metallurgist, Wm. Kahlbaum, chemist, and Elmer List, fellows in ore dressing.

At the North Central station, Minneapolis, a critical study of analyzing iron ores of the Minnesota mines has been started. It has been suggested by several operators that the laboratory methods used at other mines in the determination of different elements in iron ores be compared, and this suggestion will be followed in the investigations which the bureau is now conducting.

Tar emulsions in Water-Gas Sets can be largely prevented by proper manipulation. This is the conclusion reached at the end of an investigation made under a co-operative agreement between the U. S. Bureau of Mines and the Illinois State Geological Survey, the investigation having recently been concluded at the University of Illinois, Urbana, Ill. A method was developed for determining rapidly the percentage of water in tar emulsions.

W. W. Odell, illuminating Gas Engineer, has conducted experiments for the Bureau of Mines at Davenport, Iowa, the results of which indicate that mixtures of some mid-western coals and coke give satisfactory service as fuel in water-gas sets in substitution for the high grade eastern coke generally used in that section. A full report of Mr. Odell's investigation will shortly be published by the Bureau of Mines.

Additional experiments on the use of central district fuels in water-gas sets have been conducted by W. A. Dunkley at Joliet and Murphysboro, Ill. Many difficulties encountered in using coal have been gradually overcome. A report of these experiments is now being prepared.

A series of tests on the effects of using steam in steaming horizontal gas retorts has been made by the Bureau of Mines, in co-operation with the Illinois State Geological Survey, at Mendota, Illinois, with coals from the Elkhorn district of Kentucky and from Franklin County, Ill. With a coking time of six to eight hours, approximately 5 percent more heating value in the gas per pound of coal was obtained.

At the Pittsburgh experiment station, investigations relating to the purification of city gas are being continued in co-operation with the purification committee of the American Gas Association. A. C. Fieldner, chairman of the committee, and superintendent of the Pittsburgh experiment station, is in general charge of the work. At this station, A. R. Powell and G. S. Scott are working on the development of improved methods for determining the efficiency of iron oxides for gas purification. A bibliography on gas purification is in preparation.

At the Pittsburgh station, co-operative work has been conducted with the Bureau of Standards relative to the quantity of carbon monoxide produced when natural gas is burned in house-heating appliances under different burner adjustments.

An investigation has been conducted at Pittsburgh by the Bureau of Mines to determine the quantity of nitrogen produced when gases are analyzed by the slow-combustion and the explosion methods. The tests indicate that negligible amounts are produced by the slow-combustion method when properly conducted and none by the explosion method when air is used as the oxygen supply, although appreciable quantities are formed when mixtures of air and oxygen are used.

STRIKE INEVITABLE; SHOW-DOWN MUST COME SOONER OR LATER

By C. H. Farrell

BEGINNING with the Adamson Law in 1916, and following thereafter with a series of so-called compromises, the various railroad labor difficulties have been quieted for the time being. We have just witnessed another compromise which was hailed broadcast as a settlement of the strike which was going to paralyze industry in this country. It is not a settlement of course, no more than the Adamson Law was a settlement, nor the various concessions made by the Director General were settlements. We have simply postponed again the inveitable show-down which must come sooner or later if we are to have peace in the railroad world. Regardless of who is right and who is wrong, and regardless of the fact that a nation-wide strike would cause a great deal of suffering and inconvenience, we nevertheless are continually fooling ourselves into the belief that something will turn up and dismiss the whole problem, but such is probably not the case and if a show-down, which this writer does not believe in, is necessary surely there was never a better time for it than during the past month. This is not intended to mean that the railroads were surer of victory then than they have ever been before or will ever be again, but it is intended to mean simply that the public could have suffered through a strike better than a few months in the future, when we hope there will be a full resumption of business conditions, employment for all, and a much larger flow of traffic.

We are told that the unions were striking because the United States Railroad Labor Board had ordered a reduction in their wages of about half of the amount which it gave to them in the summer of 1920. Such is not the case. The reductions granted by the Labor Board would have been given only passing notice by the unions were it not for the fact that they are going to fight to the last ditch to save, as far as possible, the working agreements entered into with them by the Director General of railroads. These agreements are really at the bottom of all the railroad trouble. They have made it possible for the railroad employes in many ways to earn a much larger wage than they ever did before, and they have compelled the railroads and the United States government during federal control to pay large amounts of money to men for work that was never done. It is for these privileges that the unions will fight hardest, and sooner or later we are going to be forced to submit to whatever they may choose in the form of coercion unless the heads of the various unions change their attitude within the next few months.

In passing, one cannot help but feel that it would have been better to have allowed these people to go ahead with their coercive plans, for the purpose of learning whether the public is to be secure in its enjoyment of peaceful transportation or not. If every decision of the only lawful tribunal in this country that can pass upon wage questions is to be contested by the party which it does not favor, then we are in truth departing from law and order and the sooner we know it the better. The strike has not been settled. It merely has been postponed again, for about the 'steenth time beginning with the Adamson Law.

FREIGHT RATE REDUCTIONS ON MINE PRODUCTS

THE CARRIERS have announced, from time to time in the past few months, that conditions made impossible any general reductions in rates without subsequent reductions in wages. This in spite of the fact that the operating ratio for September of this year was very close to normal, the carriers' explanation for that being that they are neglecting their maintenance. The increased rates allowed by the Interstate Commerce Commission have been in effect over a year and the tonnage in this country has suffered very noticeably during that period. A scale of rates that was intended to earn for the carriers approximately six percent upon the value of \$18,900,000,000, which was fixed by the commission for rate-making purposes, has earned for them during the first nine months of this year only 2.9 percent. August showed an earning of 5 percent, and September showed an earning of 4.6 percent, but the carriers stoutly maintain that they have been able to make this showing only by neglecting the upkeep of their properties. If this is true the shipper can find little comfort in it, because in the past when business has been on the boom one thing which industry has required more than any other is the movement of its products. Were we to come out of the present slump and start in earnest a business revival of real proportions we would soon see, if our carriers were unable to handle the traffic, the price which the public had actually paid without knowing it.

The carriers in all of their propaganda and in all of their arguments practically insist that the high level of rates plays only a minor part in the diminished movement of traffic. They have contended from the very beginning that conditions following the world war have been and are responsible for the decrease in tonnage and they do not profess to think that a lowering of the rates will mean any appreciable increase in the movement of commodities unless other conditions are also remedied.

Nevertheless, there have been some reductions agreed to from time to time, and if there is merit in the contention that reduced rates will move more traffic the figures will reflect that fact in the near future. The last announcement made by the roads is to the effect that there will be an immediate reduction of 10 percent in carload rates on farm products throughout the entire country except on that traffic moving wholly within New England. These reductions on farm products will include the reductions on live stock, grain, grain products and hay, already made or provided for.

In addition to this general reduction, the carriers have made several others involving, they estimate, a reduction of their revenues of from \$175,000,000 to \$200,000,000 annually. Commissioner Lewis, of the Interstate Commerce Commission, has written to Congressman Sanders and explained in detail these reductions. A few of the larger ones of particular importance to the mining industry are as follows: 1—A reduction of 28 cents per ton on coal from Pennsylvania, West Virginia, Ohio, Kentucky, and other eastern producing points, to ports on Lake Erie when destined for movement by lake to points in the northwest. 2—Reductions varying from \$1.98½ to \$7.25½ per ton in the rates on smelter products from Colorado, Wyoming, Utah and New Mexico, to points in Central Freight Association territory east of Chicago, Eastern Trunk Line points and a few points in eastern Canada. 3—Reduction of 25 percent in the rates on export iron and steel from Chicago and Central Freight Association points to the eastern seaboard, with relative adjustments to south Atlantic coast ports. 4—Reductions in the rates on iron ore in eastern territory which eliminate all of the increases allowed by the commission in the general advance and which it is estimated will amount to \$5,000,000 per year. There have been reductions also in pig iron from southern producing points to the Pacific coast, in smelter products from Utah to the Pacific coast, in ore to smelter points in western territory, and in copper products from upper Michigan producing points to Atlantic ports, iron and steel articles, bars and rods, from Alabama, Tennessee, and Kentucky producing points to gulf ports on traffic destined to the Pacific coast via the Panama Canal.

NEW HEARING ASKED IN GOLD HUNTER CASE

IN CONSIDERING a complaint brought by the Gold Hunter Mining & Smelting Company the Interstate Commerce Commission late this summer decided that shippers of lead ores and concentrates from Sunset and Mullan, in the Coeur d'Alene mining district of Idaho, to Salida, Colorado, were entitled to have their rates made on the net value basis in effect at Pueblo instead of on the gross value basis then being applied at Salida. The waiver of undercharges on about 450 cars which the carriers were attempting to collect on the gross value basis was also authorized by the commission.

The Director General has filed a petition with the commission asking for a reconsideration of the report and a finding that both the gross value rule and the charges resulting therefrom and the Salida rate were neither unreasonable nor unduly prejudicial and that the undercharges resulting from the application of the gross value rule must be collected. The commission now has under advisement the Director General's petition, and will undoubtedly announce within the next few days whether the matter is to remain as decided or is to be reopened for further consideration.

Earnings—The net operating income of all the railroads in the United States for Spetember was \$87,174,000, an increase of 9.4 percent over the same month last year but \$26,209,000 short of the amount expected from the increased rates of a year ago. On the basis of the tentative valuation fixed by the commission the carriers earned, during September, at the annual rate of return of 4.6 percent. During the month the operating revenues were 19.6 percent less than last year and operating expenses decreased 26 percent. Taking the nine months of this year the carriers figure a net operating income of \$391,495,000, or at the annual rate of return of 2.9 percent. In the eastern district the decrease in operating revenues was 24.4 percent, and in operating expenses 29.8 percent, leaving a return of 4 percent. In the southern district operating revenues decreased 19.2 percent and operating expenses decreased 24.7 percent, leaving a rate of return of 4.5 percent. In the western district operating revenues decreased 14.1 percent and operating expenses 21.7 percent, leaving a rate of return of 5.2 percent. Thirty-six railroads had operating deficits in September compared with fifty-six in August. The carriers have issued a statement regarding these figures in which they claim that there was a decrease in maintenance expenses compared with September of a year ago of \$52,397,000, about one-third of which represents reduced wages, leaving a reduced maintenance of \$35,000,000. If maintenance work had been done at the same rate as in the previous year the net operating income would have been \$50,000,000, or at the annual rate of return of 2.7 percent. For maintenance of way and structures the decrease under September of last year was 23.3 percent, while for maintenance of equipment it was 22.7 percent.

MINES TO BENEFIT FROM BEAR RIVER DEVELOPMENT

ADDITIONAL POWER for mining purposes will be provided by the development of the Utah Power and Light Company on Bear River in Southeastern Idaho, a preliminary permit for which has been issued by the Federal Power Commission. The project will impound water for both irrigation and power, and will complete the utilization of the Bear River for power purposes at all practicable points from Bear Lake to Great Salt Lake. The development will make the river one of the most completely utilized streams for power and irrigation purposes in the west.

The completed project will add 21,500 horsepower of hydroelectric energy to the generating capacity of the company's system, now capable of developing about 165,000 horsepower, and will be connected with the big main transmission system now operating at 130,000 volts, extending from Grace plant, in Idaho, to Salt Lake City, a distance of 134 miles, and supplying a population of 300,000 with power, much of which is used in mining and manufacturing. This additional development will give added reliability in power supply and will serve to steady some of the company's smaller plants located on other streams having variable flow.

PITTMAN ACT IS SAFE

SENATOR Key Pittman, author of the Pittman Act, is convinced that the measure will not be repealed. After a recent visit to his home in Nevada he made the following statement:

"I am confident the future of silver is safe. The Pittman act will never be repealed. What little opposition there was a short time ago to the purchase of domestic silver at \$1 announce by the United States treasury department was dying out as a result of intelligent opposition on the part of engineers and mining men all over the country."

"I believe the fund established under the Pittman act will be perpetual, inasmuch as before the entire amount of white metal sold to Great Britain during the war had been purchased the price of foreign silver will exceed the set price of \$1 an ounce.

"As soon as this is the case the purchase of United States silver by the government will automatically cease and domestic stocks of metal diverted to Europe and the Orient. Foreign demand with domestic consumption would be ample to insure the existence of the fund created by the Pittman act for many years as soon as conditions in Europe return to normal."

CALIFORNIA OIL STRIKE SETTLED

IN ANNOUNCING the settlement of the California oil strike the Department of Labor reported that:

"An adjustment of the strike affecting 6,500 employes of the Doheny, Shell and other oil companies of California has been effected. This settlement insures peace in the oil industry in that state and obviates a spread of the trouble which appeared imminent. A noteworthy incident of the settlement was the readiness of the men to accept the Department's suggestions."

OIL SHALE OPERATIONS

THE LANDOFFICE reports that several citizens of Colorado have made application during the past two months for patent to oil shale placer claims in the Garfield County, Glenwood Springs, Colo., land district. Considerable activity has been going on within the oil shale areas in Rio Blanco and Garfield counties. The Ventura Consolidated Oil Fields Company and representatives of the Pure Oil Co. who have contracted for a large acreage of oil shale placer claims have been using a diamond drill proving up a lot of the lands. Three diamond drill holes have been put down to a depth of 800 feet and a rich quality of oil shale is reported developed.

OIL AND GAS PERMITS

DESPITE the record number of oil and gas cases handled by the General Land Office in September, a great many old cases still await adjudication, numerous conflicts and other complications slowing down action. More cases were finally disposed of during September than in any other month, the total of 891 showing a gain of 379 over new cases received. There were 512 new applications received and 546 permits issued, and 345 applications were finally rejected.

AFTERMATH OF THE CONVENTION

"PRESIDENT HARDING has made an important suggestion to the American Mining Congress in asking its co-operation toward devising a plan for the uniform production of coal and making this vital necessary of life available at all periods of the year by robbing it of its seasonal qualities."—*Washington Post.*

"THE ALASKA EXHIBIT at the International Mining Exposition of the American Mining Congress, which closed last Saturday at Chicago, received 'major attention' and the favorable comments caused by the exhibit but emphasizes the necessity of extensive educational work on Alaska, according to telegraphic advices received today by Governor Scott C. Bone from J. L. McPherson, secretary of the Alaska Bureau of the Seattle Chamber of Commerce. Mr. McPherson attended the exposition and gave a great deal of attention to the Alaska exhibit.

"The exhibit, with the exception of certain articles supplied by the Alaska Bureau of the Seattle Chamber of Commerce from its own collection to fill out the collection at Chicago, will be returned to Juneau and placed in the Alaska Museum. It will be thus available for other expositions in the future."—*Juneau (Alaska) Empire.*

"MINING CONGRESS convention was great success—Notable display of mine machinery."—*Skillings' Mining Review.*

"THE twenty-fourth annual convention of the American Mining Congress was one of the most successful in its history, and came at a time when American industry, in the face of world-wide adjustments, was confronted with problems of vital significance. Delegates from thirty-nine states, Alaska and Mexico, gathered in Chicago to plan for the future prosperity of the mining industry. It was a working convention in every sense of the word, and every morning, afternoon and evening of the entire week were spent by the delegates in the discussion of such serious problems as the relationships between the railroad and the mining industries, the legal responsibility of labor unions, the benefits or disadvantages of co-operative organizations through the modification of the Sherman Anti-Trust Law, the proper protection of our home industry, the establishment of wise methods of taxation, the increased utilization of metal products, and the development of American interests abroad, as well as many other questions of nation-wide importance. At no time have the economic and business functions of the mining industry as a whole been so important as at the present, and the function of the American Mining Congress was most effectively brought out at the meetings."—*Arizona Mining Journal.*

"UTAH'S EXHIBIT at the International Mining Exposition, in connection with the annual convention of the American Mining Congress, was distinctly different from any other exhibit, and was one of the striking features of the display at the Coliseum.

"The exhibit was unquestionably the most effective at the exposition."—*Eureka (Utah) Reporter.*

"THOSE engaged in the mining industry should be greatly encouraged by the message sent by President Harding to the recent annual convention of the American Mining Congress. Much of the latter is devoted to the problem that confronts the coal mining industry, and in which Utah, with the greatest known deposits of coal in the world, and where the industry is certain to constantly expand as the years progress, should be most vitally interested."—*Ira C. Tichenor in Salt Lake Telegram.*

"INCREASING INTEREST is evident in eastern business circles in the mineral industry of Utah and other western states, according to A. G. Mackenzie, secretary of the Utah Chapter of the American Mining Congress, who has just returned from the Chicago convention. Mr. Mackenzie said yesterday that he was pleasantly surprised at the amount of interest in the east in mining. Exhibitions such as those shown at the Coliseum, he said, should stimulate the interest and result in benefit to the mineral industry of Utah. Attendance at the mining show was very large. The Utah exhibit caused much favorable comment and drew large crowds of visitors, he said."—*Salt Lake Tribune.*

"A SPEAKER at the American Mining Congress asserted that the iron resources of the United States would last 2,000 years. But perhaps he did not take into consideration the great demand for iron on the part of the tonic-swallowing public."—*Daily Oklahoman.*

"IN CONNECTION with the annual convention of the American Mining Congress now in session in Chicago there is being held what is regarded as the greatest exposition of its kind that has ever occurred. . . . Representatives from all the great powers are present and are studying this concrete exhibition of the mineral resources of the United States. . . . Much good will undoubtedly result from the convention with its elaborate displays and it is expected that an immediate and apparent improvement will be noted throughout the entire industry."—*Mobile Register.*

"BOTH Arizona and California have done themselves proud by what they offered.

"However, these two states are not alone in their glory at the American Mining Congress convention, for there is not a western state but what has mineral wealth of some kind to exhibit, because that is typical of the entire West, and so far as we are able to learn at this time, there is not a western state but what has presented its mineral wares in proud and attractive array at the Coliseum, where they may be reviewed by the throngs of people who find their way into the great building sometime during the sessions. This event not only is attractive to mining men and those directly interested in mining affairs, but it has demonstrated a surprising ability to appeal to people of every walk of life, many of whom evidently have never seen a mine."—*Los Angeles Commercial News.*

"THE NATIONAL EXPOSITION of the American Mining Congress at Chicago last week produced great results. The array of equipment and devices for use at oil, coal and metal operations was never before equalled in this country. The exhibits attracted hundreds of interested men, all of whom were pleased."—*Scranton Times.*

PETROLEUM INVESTIGATIONS

FIELD STUDIES on losses of crude oil by evaporation from lease storage tanks have been completed by the Bureau of Mines station at Bartlesville, Okla. In one producing district a thorough study of evaporation losses was made, first, under ordinary storage conditions, and later, with the lease storage tanks equipped with gas-tight roofs. The saving due to the installation of new, up-to-date equipment amounted to from two to four barrels of oil per day for each tank covered. An investigation has been started to determine the loss of crude oil through evaporation at pipeline measuring stations, and arrangements have been made for a series of tests on a trunk pipeline from the Cushing and Glenn Pool fields to a station at Powderly, Texas.

A field investigation of pumping equipment used in the Mid-Continent field is being made by the Bureau.

Tests at the Bartlesville station on low-pressure gas burners used in oil-field boilers have been completed. Eleven low-pressure burners were tested in this investigation. Arrangements have been made to obtain additional field data on steam consumption under different drilling operations.

Work is in progress at the Pittsburgh station on the relation of sulphur, unsaturates, and gum-forming compounds to suitability for motor fuel.

A survey of the Mexia oil field in Texas will be begun shortly by the Dallas office of the Bureau of Mines. It is expected to define the strata in the proven area and to outline the best methods of production and conservation for this particular field.

PORTLAND CEMENT

BOTH production and shipments of portland cement were greater during the first ten months of 1921 than during the corresponding period of last year. There was likewise an appreciable increase during October, the tenth month, notwithstanding the seasonal trend.

The production for the first ten months of 1921, was not only greater than the production during the corresponding period of 1920, but about 10.5 percent in excess of the average for the same period during the five years 1917-1921.

Shipments for October exceeded the production and established a record. They exceeded those during the corresponding period of 1920 by about 1.5 percent and exceeded the average for the same period during the five years 1917-1921 by over 11.3 percent.

Stocks of finished cement at the mills at the end of October were approximately 5;348,000 barrels, compared with 6,953,000 barrels at the beginning of the month, and with the average of about 6,014,000 barrels for October during the last five years.

Production of clinker, or unground cement, in October was approximately 9,891,000 barrels. Clinker production for the ten months amounted to approximately 82,419,000 barrels.

The Bureau of Foreign and Domestic Commerce reports that imports of hydraulic cement in October amounted to 11,448 barrels, valued at $32,940; the total for the first ten months of 1921 was 76,878 barrels, valued at $270,180. The exports of hydraulic cement in October were 79,878 barrels, valued at $254,914; the total exports for the ten-month period were 1,013,517 barrels, valued at $3,784,370. The exports in October went to Cuba and the other West Indies, 41,395 barrels; South America, 19,989 barrels; Mexico, 12,003 barrels; Central America, 4,487 barrels; Canada, 1,278 barrels; other countries, 726 barrels. The exports for the whole year 1920 were nearly 3,000,000 barrels.

CHANCE FOR U. S. FINANCE SEEN IN SWEDEN'S SHALE FIELDS

AMERICAN CAPITAL may find "highly profitable employment" in the Swedish oil shale industry, according to consular reports reaching the Commerce Department. It is stated that a development company which recently became bankrupt has offered its plant, into which $800,000 has been placed, to the Swedish government for $130,000, but has not yet received an acceptance. An appropriation of $20,000 has been made by the Swedish government for the testing of various methods of extracting oil from shale, following the expression of opinion by prominent engineers that the deposits could be turned into sources of high profit in production of mineral oils, tar, asphalt and sulphate of ammonia. The shale deposits of the country are stated to be "enormous and practically inexhaustible."

NEW METHOD FOR TESTING THE PURITY OF GOLD

ANALYSIS of gold is to be rendered far more exact than is possible under existing methods. Experts of the Bureau of Standards, have just concluded a series of experiments in which electricity is employed to reveal the presence of even the minutest particles of impurities in the precious metal.

"While it is not expected that the new method will immediately replace the familiar furnace of the assayer," said an official of the bureau in commenting on the experiments, "it will provide a check method and a means of determining even smaller amounts of impurities than can now be detected."

Analysis by the new spectroscopic method will be faster and less expensive than those made by the assay method. The routine process, which can be repeated many times in a single day, will be, briefly: Two pieces of gold are clamped close together and a spark is allowed to play across with a potential difference of several thousand volts. A diffraction grating, which is a piece of metal on which 7,500 lines per lineal inch have been ruled, is used to break up the light which the spark creates. A permanent record of the light is made on an ordinary photographic plate which can be compared with photographs of the standard gold samples.

The set of light rays given off by each kind of metal and other element is absolutely different from any other that exists. Gold has its peculiar set of lines and all the other metals that occur as impurities in the gold can be distinguished by their own distinctive lines.

Using gold furnished by the San Francisco mint, the bureau's experts have made up a set of samples, the impurity content of which has been ascertained through use of the spectral analysis. Duplicate sets of these samples have been tested. In making them a specially refined gold was needed. The "1,000 fine" gold, which is the highest grade in the mint, was found to be only 99.997 percent pure when subjected to the new tests, whereas the gold in the samples which have recently been made up has been found to be 99.999 percent pure.

The net result is that the presence of impurities, whether they be copper, silver, iron, lead or other elements, will be discovered even though they exist in only one part to a million parts of gold. The extreme accuracy which the new system insures is evident when it is noted that an assay may be in error as much as two-hundredths of one percent, or one part in 5,000.

MINING REVIVAL IN MEXICO

FOREIGN OWNERS are returning, and other indications of a mining revival are noted in dispatches from Mexico City. Americans and Englishmen are said to be specially active. The following press dispatch also carried figures of Mexican mineral production:

"Mexico would appear to be on the eve of a great revival in the development of its mineral resources judging by the number of American and British mining engineers who are looking over the ground."

INDUSTRIAL NOTES

THE Hercules Powder Company of Wilmington, Delaware, has just issued a booklet entitled, "Flotation," by Dr. H. J. Stander, who is now flotation engineer with the Naval Stores Division of the above named company. It contains interesting information on flotation and the various oils used in the process. It has been published simply to provide information to users of flotation oils and anyone interested may obtain a free copy of this booklet by writing to the Naval Stores Division, Hercules Powder Company, Wilmington, Delaware.

W. J. Kearns early in October tendered his resignation as sales manager of the Kenova Mine Car Company, Kenova, W. Va., and announces that it has been accepted. It is his intention to go into business for himself. Mr. Kearns, prior to his connection with the Kenova Mine Car Company, was with the Hyatt Roller Bearing Company as a sales engineer and prior to that was general superintendent of the Isabella Connellsville Coke Company, Isabella, Penna. He is well known to the coal men of the Connellsville coke field.

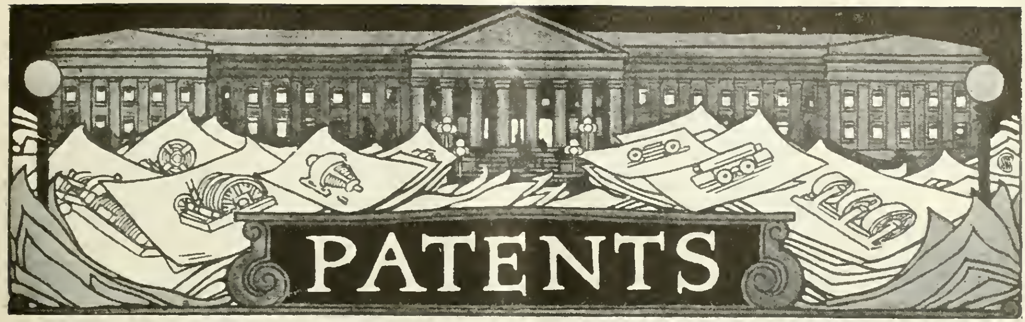
The Hercules Powder Company of Wilmington, Delaware, has just issued a booklet entitled "Volume vs. Weight," which presents to the public a phase of the explosive question which the average user very seldom considers. Every one interested in reducing blasting costs should read it. Copy of this booklet may be procured free by writing to the Advertising Department, Hercules Powder Company, Wilmington, Delaware, or to any branch office of the Hercules Powder Company.

The Wholesale Coal Company, with general offices located in the Chamber of Commerce Building, Pittsburgh, are in the market for one million tons of West Virginia, Ohio, Pennsylvania, and Kentucky coal, for shipment between October 15, 1921, and the first of April, 1922.

This company is acting as purchasing agent for three hundred consumers of coal and will require a heavy tonnage of coal over the next six months to take care of their requirements.

SIERRAS POWER LICENSE

LICENSES issued by the Federal Power Commission at its recent meeting include one granted to the Southern Sierras Power Company for a branch transmission line to be built from its trunk line to some gold mines located in San Bernardino County, Cal. A similar license was authorized for the same project to the mine operators but they relinquished their rights in favor of the power company.



PATENTS

CONDUCTED BY JOHN BOYLE, JR.

1,383,909—*W. J. Davis*, Accoville, W. Va., July 5, 1921.

MINERS' BREAST PLATE.

1,385,277—*A. H. Rudge*, Newark, N. J., July 19, 1921.

CHAT SEPARATOR FOR CONCENTRATING JIGS. One object of the invention is to provide a separator so constructed that it may be associated with a jig of conventional construction, and not require alteration in the construction of the jig, the separator being provided with one or more outlets for registering with the outlets of the jig.

1,385,693—*E. T. Lednum*, Denver, Colo., July 26, 1921. Assigned to E. I. du Pont de Nemours & Co.

CONCENTRATOR TABLE having a surface of pyroxylin coated fabric. Such a fabric when functioning as a concentrator table surface has been found to possess marked advantages over other surfacing materials commonly used in various arts. Thus, comparative tests have been shown that in general it will last at least twice as long as linoleum. The abrasive action of the ore, and the hydrolyinz action of the sulfuric acid which is frequently present in mine waters, soon destroys the linseed oil content of linoleum, whereas the tough, flexible film of pyroxylin protecting the fabric base, ruggedly resists abrasion and is practically immune to sulfuric acid corrosion. Linoleum freezes at low winter temperature, so that careful handling would be required should it be found necessary to recover a table during periods of low temperature, whereas the flexibility of a pyroxylin coated fabric is practically unimpaired by winter temperatures. The pyroxylin coated fabric used is white in color, so as to present a sharp contrast with the ore, and to show clearly the lines of demarcation of the flow of ore across the table, thereby permitting a closer adjustment of the table and the production of cleaner concentrates.

1,385,706, 1,385,707, 1,385,708—*J. Oliphant*, Chicago, Ill., July 26, 1921. Assigned to Sullivan Machinery Co.

AIR LIFT SYSTEMS.

1,386,252—*J. Norberg*, Latouche, Alaska, Aug. 2, 1921.

CONCENTRATE DRYER for drying ore after the same leaves the filter, sufficiently to permit shipping thereof; includes a pan structure positioned on an incline and having rollers carried by its lower end which ride over a track and its upper receiving end connected to a crank shaft which reciprocates, for jogging the pan or carrier to cause the concentrate to travel there over.

1,386,716—*R. Luckenbach*, Brooklyn, N. Y., Assigned to Luckenbach Processes, Inc.

FLOTATION PROCESS involving the use of a resinous substance as the material selective and frothing agent, and particuarly the resins copal, shellac, rosin, or combinations of any two or more of them in the form of solutions made by dissolving each of them in a suitable solvent. Ammonia may be added to certain of the resins, likewise oleic acid, or animal oil or grease, such as tallow.

1,387,370—G. H. ELMORE, Swarthmore, Pa., Aug. 9, 1921.

JIG for washing coal comprising a simple automatic control for the discharge of the heavier materials separated from the lighter materials in the jig, such heavier materials being, in the case of coal washers, the slate and bone. The control device is of that type dependent upon the use of a float working in the jig bed. The discharge is controlled by a movable platform or leaf which retains a varying mass or accumulation of the discharging heavy material against the outer side of the discharge opening from the jig. The platform is moved by the float to vary the amount of material so maintained and hence to exert a varying resistance to the outflow of further material from the jig bed.

1,387,075—C. C. RUEGER, Benicia, Calif., Aug. 9, 1921.

ORE CONCENTRATOR known as bateas or pans and comprising a circular pan having a circular central rim for the discharge of tailings, and a circular peripheral rim for the discharge of concentrates, the deepest part of the pan being located along a circular channel intermediate and concentric to the said discharge rims, the pan bottom rising from said lowest level by concentric slopes to said central and peripheral discharge rims and means for producing differential oscillations, to cause upward travel of the concentrates from the lower level of the pan toward the peripheral pan and means for imparting shocks to the pan at the end of each oscillation, to accelerate this upward travel.

1,387,886—*T. Donohoe*, Edgewood, Pa., Aug. 16, 1921.

COAL MINING MACHINE for undercutting and for removing the over-hanging or undercut breast of coal as the undercutting proceeds, as distinguished from the present method of undercutting and removing the machine before dropping and loading the coal. The invention is embodied in a machine wherein a vertically shallow platform supports the undercutting means and upon which the undercut coal is adapted to be dropped either while the undercutting means is operating or at a standstill, as may be preferred, together with conveyer means for receiving the coal from the platform and delivering it directly to pit cars or wagons for removal from the mine. The invention includes a coal delivering conveyer of improved construction for receiving coal dropped on the undercut-entering platform; also mechanism of improved construction carried by the platform for moving the dropped coal to position to be taken up by said conveyer. The delivery conveyer is preferably arranged at an upward incline and with the point of delivery located in the highest portion thereof and at sufficient elevation to drop the coal into a pit car or wagon located therebeneath.

1,388,681—*W. W. Wingo*, Wilberton, Oklahoma, Aug., 23, 1921.

AUTOMATIC TRAP DOOR FOR MINES extending transversely of a mine track, means being provided whereby upon the approach of a car the door will be automatically opened and after the car has passed through it will be automatically closed, the operation being equally efficient when the car approaches from either side of the door. The door is operated entirely by trips engaged by the axle or some other portion of the car traveling over the track.

1,388,868—*F. B. Jones*, London, England, and *E. Bury*, Yorkshire, England, Aug. 30, 1921. Assigned to Minerals Separation North American Corporation.

PROCESS OF PURIFYING LIQUORS BY FROTH FLOTATION containing organic matter derived from the scrubbing of a gas obtained from coal and containing finely divided carbonaceous matter and thereby producing a froth containing said organic matter and carbonaceous matter.

1,389,066—*P. J. Murphy*, Dubois, Pa., August 30, 1921.

STEEL MINE RAIL TIE.

1,389,076—*W. W. Sloane*, Chicago, Ill., Aug. 30, 1921. Assigned to Goodman Mfg. Co.

MINING LOCOMOTIVE of the storage battery type which readily adapts itself to uneven track surfaces. Where a plurality of attached sections are used, the sections must have the desired relative movement to facilitate the passing around curves, but must be substantially rigidly connected so far as relative vertical movement among them in a vertical plane longitudinally of the vehicle is concerned so that the strains are transmitted from one section to another and in the particular construction shown from either end section through the central section to the other end section, and so that the pull of the locomotive will not tend to lift any of the wheels off the track or unduly reduce the load thereon. This vertical rigidity, however, tends to cause some of the wheels to be lifted from the track where the track is undulating or uneven, that is, where there are depressions and hills along the rails of the track, or where one side of the track is higher than the other. One of the objects of the present invention is to, while maintaining this rigidity against relative vertical movement among the sections longitudinally thereof, at the same time provide a proper relative vertical movement between the sections about an axis substantially parallel to the line of travel of the locomotive so that the wheels will properly engage the track where the track is uneven and where all of such wheels will be on the track even when one rail is higher than the other.

1,389,184—*D. Cole and J. Bergmann*, El Paso, Texas, Aug. 30, 1921.

METHOD AND PLANT FOR STORING AND AVERING MATERIALS particularly adapted for use with ore in a finely crushed condition and in cold climates.

1,389,421—*C. S. Corrigan*, Norwood, Ohio, Aug. 30, 1921.

POWER SHOVEL for use in mines to load coal and ore in the cars comprising a small circle swing machine that digs horizontally like a steam shovel does vertically, with the shovels operating in horizontal planes when either digging or dumping, and requiring no more space above the top of the car than when the same material is loaded by hand. The shovels are dumped into cars by opening and dropping the material, and when necessary a crowd and jerk motion like a man shoveling. The operator may stack material on cars, by opening the shovels, then drawing back and closing them, and pushing the material along until the entire car is stacked full.

1,389,674—*L. D. Lyons and C. F. Hoff*, Butte, Montana, Sept. 6, 1921.

FLOTATION MACHINE provided with a floating froth cutter at the lip of each spitzkasten which will always remove a definite depth of concentrate froth, regardless of the pulp level in the spitzkasten, which may vary due to variations in the volume of the pulp fed into the first spitzkasten.

1,389,920—*P. Weaver*, Tampico, and *H. C. Craig*, Potrero del Llamo Camp, Mexico. One-half assigned to Whitehall Petroleum Corp., Ltd.

OIL WELL CASING. The oil tends to gush up through the casings, and it is customary to provide a valve to close the upper end of the casings to control the flow of the oil out of the casings. It has generally been customary to secure this valve on the top of casing of smallest diameter, this practice having the advantage of making possible the rapid closing of the valve in case of a sudden striking of oil. This practice, however, has the disadvantage of requiring the removal of the rather heavy valve each time a new section is added to the said casing and the securing of the valve to the newly added section. In accordance with this invention, the valve is preferably secured to a casing of larger diameter, and the casing of smaller diameter is passed through the valve.

1,390,080—*S. L. Boggs*, Ivanhoe, Va., Sept. 6, 1921.

OIL SEPARATOR for more effectively producing the separating froth and for causing a positive circulation of the mixtures in the apparatus. The apparatus described is particularly efficient in that the agitator is designed to produce very rapidly a dense body of suds, in that a second and supplementary agitation is provided by the small paddle wheel, and in that the division of the tank and driven agitators are adapted to produce a continuous production and expulsion of the suds.

1,390,695—*C. H. Funkey*, Ramsay, Michigan, Sept. 13, 1921.

MINE CAR LOADING SHOVEL having a longitudinal cross head slidable on cross head guides carried on top of the cars, said cross head having pivotally mounted therein a transversely slidable yoke, which yoke carries an air cylinder having a shovel carrying piston mounted therein, and means whereby the cross head and shovel may be simultaneously moved toward the front of the car during a shoveling operation.

1,390,793—*J. T. Kyle and V. W. Russell*, Brea, California, Sept. 13, 1921.

OIL TRAP FOR WELLS AND PIPE LINES having a receptacle adapted to be movably supported within the confines of an oil well derrick and in proximity to the casing head of an oil well and arranged for attachment to the pump tubing held in said casing, when it is desired or necessary for any reason to withdraw the tubing from the casing, in order to receive the substantial quantity of oil held in said tubing and to prevent the waste thereof which would otherwise ensue.

1,391,301—*J. J. Cramer*, Pine Grove, Calif., Sept. 20, 1921.

ORE MILLING MACHINE.

1,391,026—*H. B. Walling*, Salt Lake City, Utah, Sept. 20, 1921.

SCREENING AND CONCENTRATING DEVICE adapted to be employed for concentrating fine gold from ore bearing gravel, sand or mine tailings.

1,391,078—*G. C. Riser, Jr.*, McGill, Nev., Sept. 20, 1921.

AERATION CELL FOR FLOTATION MACHINES which is covered for substantially its entire length, the cover providing in effect a seal extending beyond the zone of aeration substantially to the concentrate collecting trough or launder, the cover terminating short of such launder whereby the air or other gas utilized to raise the metal particles is allowed to escape. At the same time, this construction results in the automatic skimming or driving off of the bubbles by the air used for aeration.

1,391,400—*J. J. Nevill*, Clifton Forge, Va., Sept. 20, 1921.

ORE SEPARATOR including a drum having thereon a series of electro-magnets, the drum rotating above a conveyer belt, the electro-magnets being energized each as it passes over the belt to pick up particles of iron therefrom, and the several magnets being deenergized when above a chute so that the particles of iron will fall into the chute and be discharged.

1,391,531—*W. Dorton*, Leadwood, Mo., Sept. 20, 1921.

ZIG.

1,393,096—*D. L. Driscoll*, Coalinga, Calif., Oct. 11, 1921, assigned one-half to Bunting Iron Works.

FISHING APPLIANCE FOR USE IN DRILLING OPERATIONS of the spring arm or finger type, the springs of which are opposed with their free ends inclined toward each other, providing a variable opening between the free ends for the reception and engagement thereby of a member there between on the lowering of the tool within a well over the object or article to be removed on the withdrawal of the tool. The spring arms are so mounted as to incline toward each other without forming the springs or arms with curves or bends, thereby providing spring arms having great resiliency, strength, and lifting power and relatively straight throughout their entire length, thereby overcoming the liability of crystallizing or breaking when heavy objects or members are lifted thereby.

1,393,214—*A. Grandjean*, Paris, France, Oct. 11, 1921.

LOADING MACHINE comprising a gathering device consisting of a fixed basin which during the loading occupies an inclined position and penetrates with its lower edge into the materials to be loaded. In this basin there is adapted to revolve a rotary shovel which is power-driven and consists of a number of radial blades integral with each other. This rotary shovel is arranged to engage the materials to be loaded which fall by gravity into the lower part of the basin, and to lift the said materials to the upper part of said basin. The basin is pierced with an aperture at this place in such a manner that the lifted materials can drop on to a conveyer of any type.

1,393,821—*Y. Otsuka*, Tokio, Japan, Oct. 18, 1921.

FLOTATION APPARATUS constructed to increase the rate of concentration and economize frothers by mixing the ore according to its nature with suitable froth forming materials and by bringing it to perfect contact with air or any other gas.

1,394,306—*D. P. Haynes*, Evanston, Ill., Oct. 18, 1921.

FLOTATION MACHINE comprising a plurality of laterally spaced, forminated rotary disks partially submerged in the pulp and adapted to entrap air from above the surface and to carry it into the pulp, where it is liberated as bubbles to form a froth.

1,394,639—*C. L. Perkins*, Pittsburgh, Pa., Oct. 25, 1921, assigned to Metals Recovery Company.

FLOTATION AGENT comprising a solution of a solid amino compound in a liquid amino compound readily miscible with water.

1,394,640—*C. L. Perkins*, Pittsburgh, Pa., Oct. 25, 1921, assigned to Metals Recovery Company.

FLOTATION AGENT comprising a mixture of a plurality of amino compounds.

1,394,658—*A. Schwartz*, Joplin, Mo., Oct. 25, 1921, assigned to Metals Recovery Company.

FLOTATION PROCESSES.

BUYER'S DIRECTORY

ACID, SULPHURIC
Irvington Smelting & Refining Works, Irvington, N. J.

AERIAL TRAMWAYS
American Steel & Wire Co., Chicago and New York.

AIR COMPRESSORS
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

AMALGAMATORS
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Mine Equipment & Supply Co., Denver, Colo.

APPLIANCES ENGINEERING
Lunkenhiemer Co., Cincinnati, Ohio.

ARMATURES
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

ASBESTOS PRODUCTS
Mikesell Bros. Co., 156 North La Salle St., Chicago, Ill.

ASSAYERS
Walter E. Burlingame, 1736 Lawrence St., Denver, Colo.
Indiana Laboratories Co., Hammond, Ind.
Ledoux & Co., Inc., 99 John St., New York.
Pennsylvania Smelting Co., Pittsburgh, Pa.
Union Assay Office, Inc., Box 1446, Salt Lake City, Utah.

AUTOMATIC CAR CAGERS
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

AUTOMATIC COAL SKIP
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

AUTOMATIC (Mine Doors, Truck and Electric Switches)
American Mine Door Co., Canton, Ohio.

BALL MILLS
Mine Equipment & Supply Co., Denver, Colo.
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

BATTERY-CHARGING EQUIPMENT
General Electric Co., Schenectady, N. Y.

BELTING (Conveyor, Elevator, Transmission)
Jeffery Mfg. Co., 958 N. Fourth Avenue, Columbus, Ohio.

BELTING, SILENT CHAIN
Morse Chain Co., Ithaca, N. Y.

BINS (Coke and Coal)
Jeffrey Mfg. Co., Columbus, Ohio.

BIT SHARPENERS
Denver Rock Drill Mfg. Co., Denver, Colo.

BLASTING SUPPLIES
Atlas Powder Company, Wilmington, Del.
du Pont Powder Co., The E. I., Wilmington, Del.
Giant Powder Co., Wilmington, Del.
Hercules Powder Co., Wilmington, Del.
National Fuse & Powder Co., Denver, Colo.

BLOWERS
General Electric Co., Schenectady, N. Y.

BOILER MOUNTINGS
Lunkenheimer Co., Cincinnati, Ohio.

BOILERS
Allis-Chalmers Mfg. Co., Milwaukee, Wis. (feed pump).
Mine Equipment & Supply Co., Denver, Colo.

BOXES, JOURNAL
J. R. Fleming & Son Co., Inc., Scranton, Penna.

BRATTICE CLOTH
Mikesell Brothers Co., 156 N. La Salle Street, Chicago, Ill.

BREAKERS (Construction and Machinery)
Jeffrey Mfg. Co., Columbus, Ohio.
Vulcan Iron Works, Wilkes-Barre, Pa.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.
Wilmot Engineering Co., Hazleton, Pa.

BRIQUETTING MACH.
Jeffrey Mfg. Co., Columbus, Ohio.

BUCKETS (Elevator)
Hendrick Manufacturing Company, Carbondale, Penna.
Jeffrey Mfg. Co., Columbus, Ohio.
Stephens-Adamson Mfg. Co., Aurora, Ill.

CABLES (Connectors and Guides)
American Mine Door Co., Canton, Ohio.

CABLEWAYS
Jeffrey Mfg. Co., Columbus, Ohio.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.

CAGES
Car-Dumper & Equipment Co., Chicago, Ill.
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Holmes & Bros., Robert, Inc., Danville, Ill.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.

CAGE (Safety Appliances)
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

CAR CONTROL AND CAGE EQUIPMENT
Car-Dumper & Equipment Co., Chicago, Ill.

CAR DUMPS
Car-Dumper & Equipment Co., Chicago, Ill.

CAR AND CAR WHEELS
Hockensmith Mine Car Co., Penn Station, Pa.
United Iron Works Co., Kansas City, Mo.
Watt Mining Car Wheel Co., Barnesville, Ohio.

CAR-HAULS
Car-Dumper & Equipment Co., Chicago, Ill.

CASTINGS
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio.
The Lunkenheimer Co., Cincinnati, Ohio.
Mine Equipment & Supply Co., Denver, Colo.

CHAINS
Jeffrey Mfg. Co., Columbus, Ohio.
Morse Chain Co., Ithaca, N. Y.
Stephens-Adamson Mfg. Co., Aurora, Ill.

CHEMICALS
The Barrett Company, 90 West St., New York City.
Roessler & Hasslacher Chemical Co., 709-717 Sixth Avenue, New York.

CHEMISTS
Walter E. Burlingame, 1736 Lawrence St., Denver, Colo.
Hunt, Robt., & Co., Insurance Exchange, Chicago, Ill.
Indiana Laboratories Co., Hammond, Ind.
Ledoux & Co., A. R., Inc., 99 John St., New York City.
Union Assay Office, Inc., Box 1446, Salt Lake City, Utah.

CIRCUIT BREAKERS
Automatic Reclosing Circuit Breaker Co., The, Columbus, O.
General Electric Co., Schenectady, N. Y.

CLAMPS (Trolley)
Ohio Brass Co., Mansfield, Ohio.

CLUTCHES
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

COAL COMPANIES
Clinchfield Coal Corp., Dante, Va.
Lehigh Coal & Navigation Co., Philadelphia, Pa.
Stonega Coal & Coke Co., Philadelphia, Pa.
Thorne, Neale & Co., Philadelphia, Pa.
Wholesale Coal Co., Pittsburgh, Pa.

COAL CRUSHERS
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Jeffrey Mfg. Co., Columbus, O.
Stephens-Adamson Mfg. Co., Aurora, Ill.

COAL CUTTERS
Goodman Mfg. Co., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, Ohio.

COAL DRYING PLANTS
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

COAL HANDLING MACHINERY
Jeffrey Mfg. Co., Columbus, Ohio.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.
Stephens-Adamson Mfg. Co., Aurora, Ill.
Watt Mining Car Wheel Co., Barnesville, Ohio.

COAL LOADING MACHINES
Myers-Whaley Company, Knoxville, Tenn.

COAL MINING MACHINERY
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Goodman Mfg. Co., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, Ohio.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

COAL MINE POWER PLANTS
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

COAL MINING PLANTS
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

COAL WASHING MACHINERY
Stephens-Adamson Mfg. Co., Aurora, Ill.

COAL WASHING PLANTS
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

COCKS (Locomotive, Cylinder and Gauge)
The Lunkenheimer Co., Cincinnati, Ohio.
Nicholson, W. H., & Co., Wilkes-Barre, Pa.

COILS (Choke)
General Electric Co., Schenectady, N. Y.

COMPRESSORS, AIR
General Electric Co., Schenectady, N. Y.

CONCENTRATORS (Magnetic)
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

CONCENTRATORS (Table)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Mine Equipment & Supply Co., Denver, Colo.
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

CONCRETE REINFORCEMENT
American Steel & Wire Co., Chicago and New York.

CONDENSERS
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

CONSULTING ENGINEERS
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.
Shourds-Stoner Co., Inc., Terre Haute, Ind.

CONTRACTORS
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

CONTROLLERS
General Electric Co., Schenectady, N. Y.
Goodman Manufacturing Co., Halsted St. and 48th Place, Chicago, Ill.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

CONVEYORS, BELT
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Stephens-Adamson Mfg. Co., Aurora, Ill.

CONVEYORS, CHAIN FLIGHT
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Wilmot Engineering Co., Hazleton, Pa.
Stephens-Adamson Mfg. Co., Aurora, Ill.

CONVEYORS, COAL
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.
Stephens-Adamson Mfg. Co., Aurora, Ill.

CONVEYORS AND ELEVATORS
Jeffrey Mfg. Co., Columbus, Ohio.
Stephens-Adamson Mfg. Co., Aurora, Ill.

CONVEYORS, PAN OR APRON
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Stephens-Adamson Mfg. Co., Aurora, Ill.

CONVEYORS, PANS AND FLIGHTS
Hendrick Manufacturing Company, Carbondale, Pa.

CONVEYORS, SCREW
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Stephens-Adamson Mfg. Co., Aurora, Ill.

COPPER ELECTROLYTIC
United Metals Selling Co., 42 Broadway, New York City.

COPPER WIRE
Anaconda Copper Mining Co., 111 W. Washington St., Chicago, Ill.

CORE DRILLING
H. R. Ameling Prospecting Co., St. Louis, Mo.
Hoffman Bros., Punxsutawney, Pa.

COUPLINGS
Nicholson, W. H., & Co., Wilkes-Barre, Pa.

CRUSHERS
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Mine Equipment & Supply Co., Denver, Colo.
Stephens-Adamson Mfg. Co., Aurora, Ill.
United Iron Works Co., Kansas City, Mo.
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

CRUSHERS, COAL
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Stephens-Adamson Mfg. Co., Aurora, Ill.
United Iron Works Co., Kansas City, Mo.

CRUSHING PLANTS, COKE
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

CYANIDE
American Cyanamid Co., New York, N. Y.
Roessler and Hasslacher Chemical Company, 709 Sixth Avenue, New York City.

DERRICKS AND DERRICK FITTINGS
James H. Channon Mfg. Co., 227 W. Erie St., Chicago, Ill.

DESIGNERS OF PLANTS
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Mine Equipment & Supply Co., Denver, Colo.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

DIAMOND CORE DRILL CONTRACTING
Hoffman Bros., Punxsutawney, Pa.

DOORS, AUTOMATIC MINE
American Mine Door Co., Canton, Ohio

DRAG LINES
Denver Rock Drill Mfg. Co., Denver, Colo.

DREDGES, GOLD AND TIN
New York Engineering Co., 2 Rector St., New York City.

DRIFTERS, DRILL
Denver Rock Drill Mfg. Co., Denver, Colo.
Ingersoll-Rand Co., New York City.

DRILLS (Blast Hole)
Denver Rock Drill Mfg. Co., Denver, Colo.
Ingersoll-Rand Co., New York City.

DRILLS, CORE
Hoffman Bros., Punxsutawney, Pa.
Ingersoll-Rand Co., New York City.

DRILLS, ELECTRIC
General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., New York City.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Union Electric Co., Pittsburgh, Pa.

DRILLS, HAMMER
Denver Rock Drill Mfg. Co., Denver, Colo.
Ingersoll-Rand Co., New York City.

DRILLS (Hand Operated Coal)
Ohio Brass Co., Mansfield, Ohio.
Ingersoll-Rand Co., New York City.

DRILLS, PNEUMATIC
Denver Rock Drill Mfg. Co., Denver, Colo.
Ingersoll-Rand Co., New York City.

DRILLS, PROSPECTING
Hoffman Bros., Punxsutawney, Pa.
New York Engineering Co., 2 Rector St., New York City.

DRILLS, ROCK
Denver Rock Drill Mfg. Co., Denver, Colo.
General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., New York City.
Union Electric Co., Pittsburgh, Pa.

DRILL STEEL SHARPENERS
Denver Rock Drill Mfg. Co., Denver, Colo.

DRIVES, SILENT CHAIN
Morse Chain Co., Ithaca, N. Y.

DRUMS (Hoisting, Haulage)
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

DRYERS, ORE
Allis-Chalmers Mfg. Co., Milwaukee. Wis.

DUMPERS, ROTARY
Car-Dumper & Equipment Co., Chicago, Ill.

DUMP CARS
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

DYNAMITE
Atlas Powder Co., Wilmington, Del.
du Pont Powder Co., The E. I. Wilmington, Del.
Giant Powder Co., Wilmington, Del.
Hercules Powder Co., Wilmington, Del.
National Fuse & Powder Co., Denver, Colo

DYNAMOS
General Electric Co., Schenectady, N. Y.
Goodman Mfg. Co., Forty-eighth Place and Halsted St., Chicago, Ill.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

EJECTORS
The Lunkenheimer Co., Cincinnati, Ohio.

ELECTRICAL APPARATUS
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

ELECTRIC HOISTING MACHINERY
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

ELECTRIC LOCOMOTIVES
General Electric Co., Schenectady, N. Y.
Goodman Mfg. Co., Forty-eighth Place and Halsted St., Chicago, Ill.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Ohio Brass Co., Mansfield, Ohio.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

ELECTRIC MINE SUPPLIES
General Electric Co., Schenectady, N. Y.
Ohio Brass Co., Mansfield, Ohio.

ELECTRICAL SUPPLIES
General Electric Co., Schenectady, N. Y.
Union Electric Co., Pittsburgh, Pa.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

ELEVATORS
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Stephens-Adamson Mfg. Co., Aurora, Ill.

ELEVATORS, BUCKET
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio
Stephens-Adamson Mfg. Co., Aurora, Ill.

ELEVATOR MACHINERY
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Stephens-Adamson Mfg. Co., Aurora, Ill.

ELIMINATORS
Nicholson, W. H. & Co. Wilkes-Barre, Pa.

ENGINE TRIMMINGS
The Lunkenheimer Co., Cincinnati, Ohio.

ENGINEERING APPLIANCES
The Lunkenheimer Co., Cincinnati. Ohio

ENGINES
Lidgerwood Mfg. Co., 96 Liberty St., New York City.
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

ENGINES, GAS AND GASOLINE
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Mine Equipment & Supply Co., Denver, Colo.
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

ENGINES (Hoisting and Hauling)
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

ENGINES, OIL
Allis-Chalmers Mfg. Co., Milwaukee. Wis.
Mine Equipment & Supply Co., Denver, Colo.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

ENGINES, STEAM
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

ENGINEERS
H. R. Ameling Prospecting Co., St. Louis, Mo.
Hunt, Robert & Co., Insurance Exchange, Chicago, Ill.
Indiana Laboratories Co., Hammond, Ind.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

EXPLOSIVES
Atlas Powder Co., Wilmington, Del.
Du Pont Powder Co., Wilmington, Del.
Giant Powder Co., Wilmington, Del
Hercules Powder Co., Wilmington, Del.
National Fuse & Powder Co., Denver, Colo.

FANS, VENTILATING
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
General Electric Co., Schenectady, N. Y.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Vulcan Iron Works, Wilkes-Barre, Pa.
Westinghouse Elec., & Mfg. Co., East Pittsburgh, Pa.

FEEDERS, ORE
Jeffrey Mfg. Co., 958 N. Foueth St., Columbus, Ohio.
Stephens-Adamson Mfg. Co., Aurora, Ill.

FILTER CLOTH METALLIC
United Filters Corpn., 65 Broadway, New York City.

FILTERS, PRESSURE AND CONTINUOUS
United Filters Corpn., 65 Broadway, New York City.

FILTERS (Water)
Wm. B. Scaife & Sons Co., Oakmont, Pa.

FLOTATION OILS
The Barrett Co., 17 Battery Place, New York City.
General Naval Stores Co., 90 West St., New York City.

FLOW METERS
General Electric Co., Schenectady, N. Y.

FORGINGS
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
James H. Channon Mfg. Co., 227 W. Erie St., Chicago, Ill.
Mine Equipment & Supply Co., Denver, Colo.

FORGED STEEL BALLS
Mine Equipment & Supply Co., Denver, Colo.

FROGS AND SWITCHES
Central Frog & Switch Co., Cincinnati, Ohio.

FURNACES, MECHANICAL ROASTING
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

GASKETS
Mikesell Bros. Co., 156 N. La Salle St., Chicago, Ill.

GEARS
General Electric Co., Schenectady, N. Y.
Jeffrey Mfg. Co.. Columbus, Ohio.
Stephens-Adamson Mfg. Co., Aurora, Ill.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

GEARS, SILENT CHAIN
Morse Chain Co., Ithaca, N. Y.

GENERAL SHEET AND LIGHT STRUCTURAL WORK
Hendrick Mfg. Co., Carbondale, Pa.

GENERATORS AND GENERATING SETS
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

GRINDING BALLS
Mine Equipment & Supply Co., Denver, Colo.

HANGERS (Insulated Trolley)
Ohio Brass Co., Mansfield, Ohio.

HANGERS (Sanitary Clothes)
James H. Channon Mfg. Co., 227 W. Erie St., Chicago, Ill.

HEADLIGHTS, ARC AND INCANDESCENT
General Electric Co., Schenectady, N. Y.
Ohio Brass Co., Mansfield, Ohio.

HOISTS, ELECTRIC
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.
Vulcan Iron Works, Wilkes-Barre, Pa.
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

HOISTS, PORTABLE
James H. Channon Mfg. Co., 227 W. Erie St., Chicago, Ill.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.
Stephens-Adamson Mfg. Co., Aurora, Ill.

HOISTS, STEAM
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.
United Iron Works Co., Kansas City, Mo.
Vulcan Iron Works, Wilkes-Barre, Pa.

HOISTS (Room & Gathering)
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Holmes, Robert & Bros., Inc., Danville, Ill.
Lidgerwood Mfg. Co., 96 Liberty St., New York City.

HOISTING ROPES
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

HYDRAULIC MACHINERY
Allis-Chalmers Mfg. Co., Milwaukee. Wis.
Car-Dumper & Equipment Co., Chicago, Ill.
Worthington Pump & Machinery Corp., 115 Broadway, New York City

INDUSTRIAL HOUSING
General Electric Co., Schenectady, N. Y.

INJECTORS
The Lunkenheimer Co., Cincinnati, Ohio.

INSTRUMENTS, ELECTRICAL
General Electric Co., Schenectady, N. Y.

INSULATING MATERIAL, ELECTRIC
General Electric Co., Schenectady, N. Y.
Mikesell Bros. Co., 156 N. La Salle St., Chicago, Ill.

INSULATING TAPE AND CLOTH
General Electric Co., Schenectady, N. Y.
Mikesell Bros. Co., 156 N. La Salle St., Chicago, Ill.

INSULATORS, FEEDER WIRE
General Electric Co., Schenectady, N. Y.
Ohio Brass Co., Mansfield, Ohio.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

INSULATORS, SECTION
General Electric Co., Schenectady, N. Y.
Ohio Brass Co., Mansfield, Ohio.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

INSULATORS (Porcelain)
General Electric Co., Schenectady, N. Y.
Ohio Brass Co., Mansfield, Ohio.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

INSULATORS (Third Rail)
General Electric Co., Schenectady, N. Y.
Ohio Brass Co., Mansfield, Ohio.

INSULATORS (Trolley)
General Electric Co., Schenectady, N. Y.
Ohio Brass Co., Mansfield, Ohio.

INSULATED WIRE AND CABLE
American Steel & Wire Co., Chicago, Ill.
Roebling Sons, John A., Trenton, N. J.

JACKS
James H. Channon Mfg. Co., 227 W. Erie St., Chicago, Ill.

JIGS
Mine Equipment & Supply Co., Denver, Colo.

JOURNAL BOXES
J. R. Fleming & Son Co., Inc., Scranton, Penna.

KILNS (Rotary)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

KILNS (Rotary Ore Nodulizers)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

LAMPS, ARC AND INCANDESCENT
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

LAMPS (Carbon)
General Electric Co., Schenectady, N. Y.

LAMPS, ELECTRIC
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

LEAD ORES
American, Zinc, Lead & Smelting Co., 1012 Pierce Bldg., St. Louis, Mo.

LIGHTNING ARRESTERS
General Electric Co., Schenectady, N. Y.

LOADING BOOMS
Connellsville Mfg. & Mine Supply Co., Connellsville. Pa.
Jeffrey Mfg. Co., Columbus, Ohio.
Roberts & Schaefer Co., McCormick Bldg., Chicago. Ill

LOADING MACHINES
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Myers-Whaley Company, Knoxville, Tenn.

LOCOMOTIVE COALING STATIONS
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

LOCOMOTIVES, ELECTRIC
General Electric Co., Schenectady, N. Y.
Goodman Mfg. Co., Chicago, Ill.
Ironton Engine Co., Ironton, Ohio.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Mancha Storage Battery Locomotive Co., St. Louis, Mo.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

LOCOMOTIVES, GASOLINE
Ironton Engine Co., Ironton, Ohio.
Mine Equipment & Supply Co., Denver, Colo.
Vulcan Iron Works, Wilkes-Barre, Pa.

LOCOMOTIVES, RACK RAIL
Goodman Mfg. Co., Chicago, Ill.
Ironton Engine Co., Ironton, Ohio.

LOCOMOTIVES, STEAM
Vulcan Iron Works, Wilkes-Barre, Pa.

LOCOMOTIVES, STORAGE BATTERY
General Electric Co., Schenectady, N. Y.
Goodman Mfg. Co., Chicago, Ill.
Ironton Engine Co., Ironton, Ohio.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Mancha Storage Battery Locomotive Co., St. Louis, Mo.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

MACHINERY, TRANSMISSION (Power)
Morse Chain Co., Ithaca, N. Y.

MICA
Mikesell Bros. Co., 156 N. La Salle St., Chicago, Ill.

MILLS, BALL
Mine Equipment & Supply Co., Denver, Colo.
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

MILLS, STAMP
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Mine Equipment & Supply Co., Denver, Colo.

MINE CAR TRUCKS
J. R. Fleming & Son Co., Inc., Scranton, Penna.

MINE DOORS, AUTOMATIC
American Mine Door Co., Canton, Ohio.

MINING MACHINES
Goodman Mfg. Co., Forty-eighth Place and Halsted St., Chicago, Ill.

MINING MACHINES CHAIN AND PUNCHER
Goodman Mfg. Co., Forty-eighth Place and Halsted St., Chicago, Ill.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

MINING MACHINES (Electric)
General Electric Co., Schenectady, N. Y.
Goodman Mfg. Co., Chicago, Ill.
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

MINING MACHINERY
James H. Channon Mfg. Co., 227 W. Erie St., Chicago, Ill.
Denver Rock Drill Mfg. Co., Denver, Colo.
Mine Equipment & Supply Co., Denver, Colo.

MINE CAR HITCHINGS
Hockensmith Wheel & Mine Car Co., Penn Station, Pa.

MINE CAR TRUCKS
Hockensmith Wheel & Mine Car Co., Penn Station, Pa.

MINE SIGNALS
American Mine Door Co., Canton, Ohio.

MINE SUPPLIES
Mine Equipment & Supply Co., Denver, Colo.

MINING EQUIPMENT
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Worthington Pump & Machiner Corp., 115 Broadway, New Yor City.

MOTOR CONTROL APPARATUS
General Electric Co., Schenectady, N. Y.

MOTORS
General Electric Co., Schenectady, N. Y.
Goodman Mfg. Co., Chicago, Ill.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

MOUNTINGS, BOILER
The Lunkenheimer Co, Cincinnati, Ohio.

NODULIZERS, ORE
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

OILS, FLOTATION, CREOSOTE
The Barrett Company, New York City.

ORE, BUYERS AND SELLERS OF
Irvington Smelting & Refining Works, Irvington, N. J.
Phelps-Dodge Corporation, New York City.

ORE CRUSHERS
Mine Equipment & Supply Co., Denver, Colo.

ORE FEEDERS
Mine Equipment & Supply Co., Denver, Colo.

ORE SAMPLERS
Indiana Laboratories Co., Hammond, Ind.
Ledoux & Co., Inc., 99 John St. New York.

PERFORATED METALS
Chicago Perforating Co., Chicago, Ill.
Hendrick Mfg. Co., Carbondale, Pa.

PERMISSIBLES, Explosives
Atlas Powder Co., Wilmington, Del.
du Pont Powder Co., The E. I., Wilmington. Del.
Giant Powder Co., Wilmington, Del.
Hercules Powder Co., Wilmington Del.
National Fuse & Powder Co., Denver, Colo.

PICKING TABLES
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.
Stephens-Adamson Mfg. Co., Aurora, Ill.

PIG LEAD
Pennsylvania Smelting Co., Pittsburgh, Penna.
United Metals Selling Co., 42 Broadway, New York City.

PIPE, CAST IRON
Hockensmith Mine Car Co., Penn Station, Pa.

PIPE COVERINGS
Mikesell Bros. Co., 156 N. La Salle St., Chicago, Ill.

PIPE (Wood)
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

POWDER, BLASTING
Atlas Powder Co., Wilmington. Del.
du Pont Powder Co., The E. I., Wilmington, Del.
Giant Powder Co., Wilmington, Del.
Hercules Powder Co., Wilmington, Del.
National Fuse & Powder Co., Denver, Colo.

POWER SHOVELS
Myers-Whaley Company, Knoxville, Tenn.

POWER TRANSMISSION MACHINERY
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Stephens-Adamson Mfg. Co., Aurora, Ill.

PRESSES

United Filters Corpn., 65 Broadway, New York City.

PROSPECTING DRILLS

Hoffman Bros., Punxsutawney, Pa.

PULVERIZERS COAL AND COKE

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

PUMPS, CENTRIFUGAL

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
United Iron Works Co., Kansas City, Mo.
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

PUMPS, MILL

Worthington Pump & Machinery Corp., 115 Broadway, New York City.

PUMPS, MINE

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
United Iron Works, Kansas City, Mo.
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

PUMPS (Electric)

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

PUMPS (Gathering or Dip)

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

PUMPS, POWER

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
General Electric Co., Schenectady, N. Y.

PUMPS, STEAM

Worthington Pump & Machinery Corp., 115 Broadway, New York City.

PUMPS, VACUUM

Worthington Pump & Machinery Corp., 115 Broadway, New York City.

RAIL BONDS

American Steel & Wire Co., Chicago and New York.
General Electric Co., Schenectady, N. Y.
Ohio Brass Co., Mansfield, Ohio.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa

RAILWAY SUPPLIES

James H. Channon Mfg. Co., 227 W. Erie St., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Ohio Brass Co., Mansfield, Ohio.

ROCK CRUSHERS

Mine Equipment & Supply Co., Denver, Colo.

ROCK DRILLS

Denver Rock Drill Mfg. Co., Denver, Colo.
General Electric Co., Schenectady, N. Y.

RODS, COPPER, HOT ROLLED

Anaconda Copper Mining Co., Rolling Mills Dept., 111 W. Washington St., Chicago, Ill.

ROLLING MILL MACHINERY

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

ROPE, TRANSMISSION

American Steel & Wire Co., Chicago and New York.
Roebling Sons, John A., Trenton, N. J.

ROPE, WIRE

American Steel & Wire Co., Chicago and New York.
James H. Channon Mfg. Co., 227 W. Erie St., Chicago, Ill.
Roebling Sons, John A., Trenton, N. J.

ROTARY DUMPS

Car-Dumper & Equipment Co., Chicago, Ill.

SAFETY APPLIANCES, MINE

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

SAMPLERS OF ORE

Indiana Laboratories Co., Hammond, Ind.
Ledoux & Co., Inc., 99 John St., New York.

SCRAPER LOADERS

Goodman Manufacturing Co., Halsted St. and 48th Place, Chicago, Ill.

SCREENS

Hendrick Mfg. Co., Carbondale, Pa.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

SCREENS (Gravity)

Stephens-Adamson Mfg. Co., Aurora, Ill.

SCREENS AND PERFORATED SHEETING

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Chicago Perforating Co., Chicago, Ill.
Hendrick Mfg. Co., Carbondale, Pa.
Holmes & Bros., Inc., Robert, Danville, Ill.
Jeffery Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

SCREENS, REVOLVING

Chicago Perforating Co., Chicago, Ill.
Hendrick Mfg. Co., Carbondale, Pa.
Stephens-Adamson Mfg. Co., Aurora, Ill.

SEARCHLIGHTS

General Electric Co., Schenectady, N. Y.

SEPARATORS (Steam)

Nicholson & Co., W. H., Wilkes-Barre, Pa.

SHOVELS

Myers-Whaley Company, Knoxville, Tenn.

SHOVELS (Steam, Gas and Electric)

Myers-Whaley Company, Knoxville, Tenn.

SINKERS, ROCK DRILL

Denver Rock Drill Mfg. Co., Denver, Colo.

SKIPS

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

SMELTERS

Irvington Smelting & Refining Works, Irvington, N. J.

"SOLIDCAR" SELF-DUMPING CAGES

Car-Dumper & Equipment Co., Chicago, Ill.

SPLICE, CABLE

American Mine Door Co., Canton, Ohio.
Ohio Brass Co., Mansfield, Ohio.

SPLICE, INSULATOR

American Mine Door Co., Canton, Ohio.

SPLICE, TROLLEY WIRE

American Mine Door Co., Canton, Cincinnati, Ohio.
General Electric Co., Schenectady, N. Y.
Ohio Brass Co., Mansfield, Ohio.
Union Electric Co., Pittsburgh Pa.

SPROCKETS, SILENT CHAIN

Morse Chain Co., Ithaca, N. Y.

STEEL, REINFORCING

American Mine Door Co., Canton, Ohio.

STOPERS, ROCK DRILL

Denver Rock Drill Mfg. Co., Denver, Colo.

STORAGE BATTERIES

Edison Storage Battery Co., Orange, N. J.

STORAGE BATTERIES, LOCOMOTIVES

General Electric Co., Schenectady, N. Y.
Mancha Storage Locomotive Co., St. Louis, Mo.

SWITCHBOARDS, POWER

General Electric Co., Schenectady, N.Y.
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

SWITCHBOARDS, TELEPHONE

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

SWITCHES (Disconnecting and Electric)

General Electric Co., Schenectady, N. Y.

SWITCHES, FROGS AND CROSSINGS

Central Frog & Switch Co., Cincinnati, Ohio.
Union Electric Co., Pittsburgh, Pa.

SWITCHES AND FROGS, TROLLEY

American Mine Door Co., Canton, Ohio.
Electric Railway Equipment Co., Cincinnati, Ohio.
General Electric Co., Schenectady, N. Y.
Ohio Brass Co., Mansfield, Ohio.
Union Electric Co., Pittsburgh, Pa.

TIPPLES

Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

TIPPLE DESIGNERS

Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.
Shourds-Stoner Co., Inc., Terre Haute, Ind.

TIPPLE EQUIPMENT

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.
Stephens-Adamson Mfg. Co., Aurora, Ill.

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